

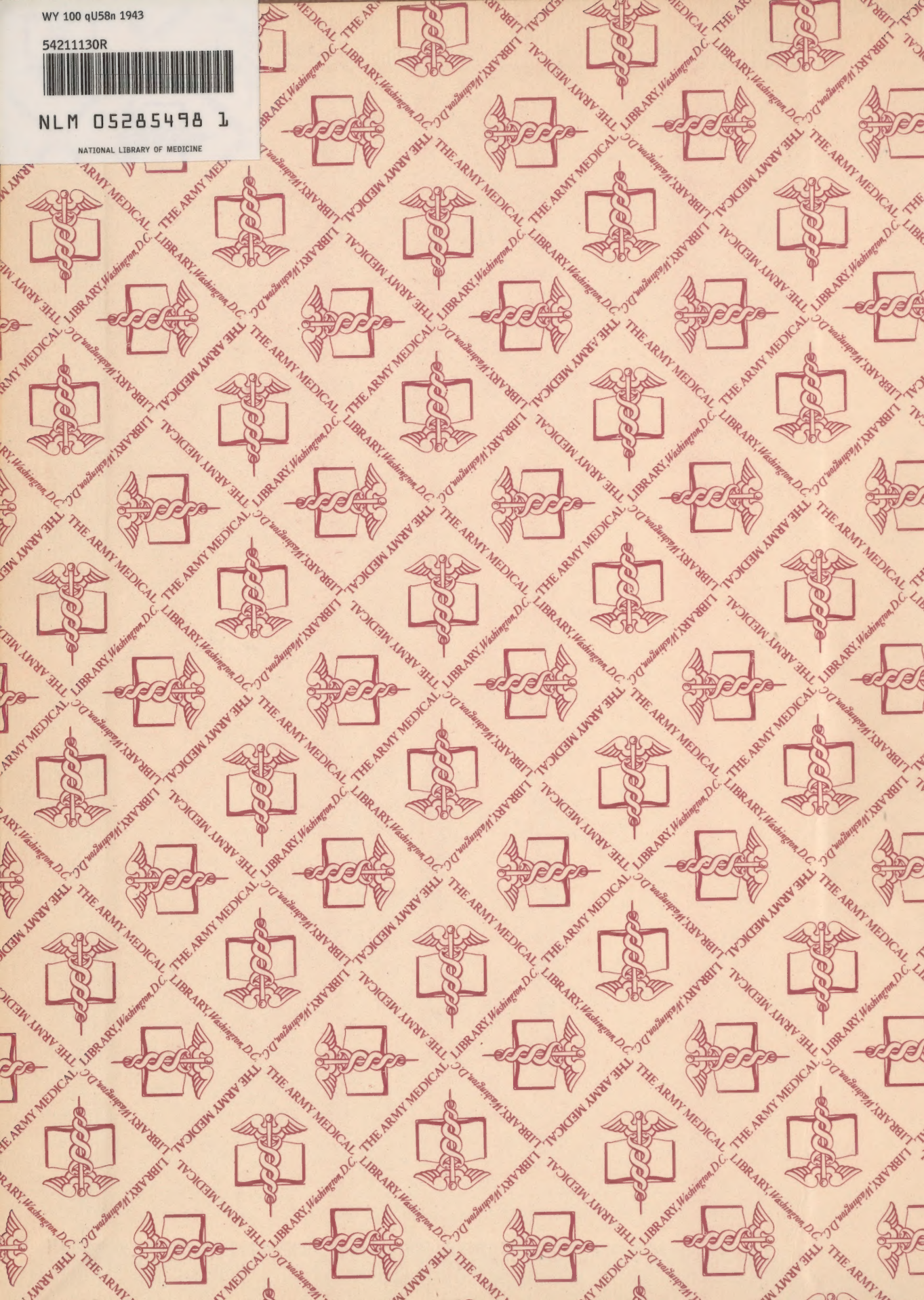
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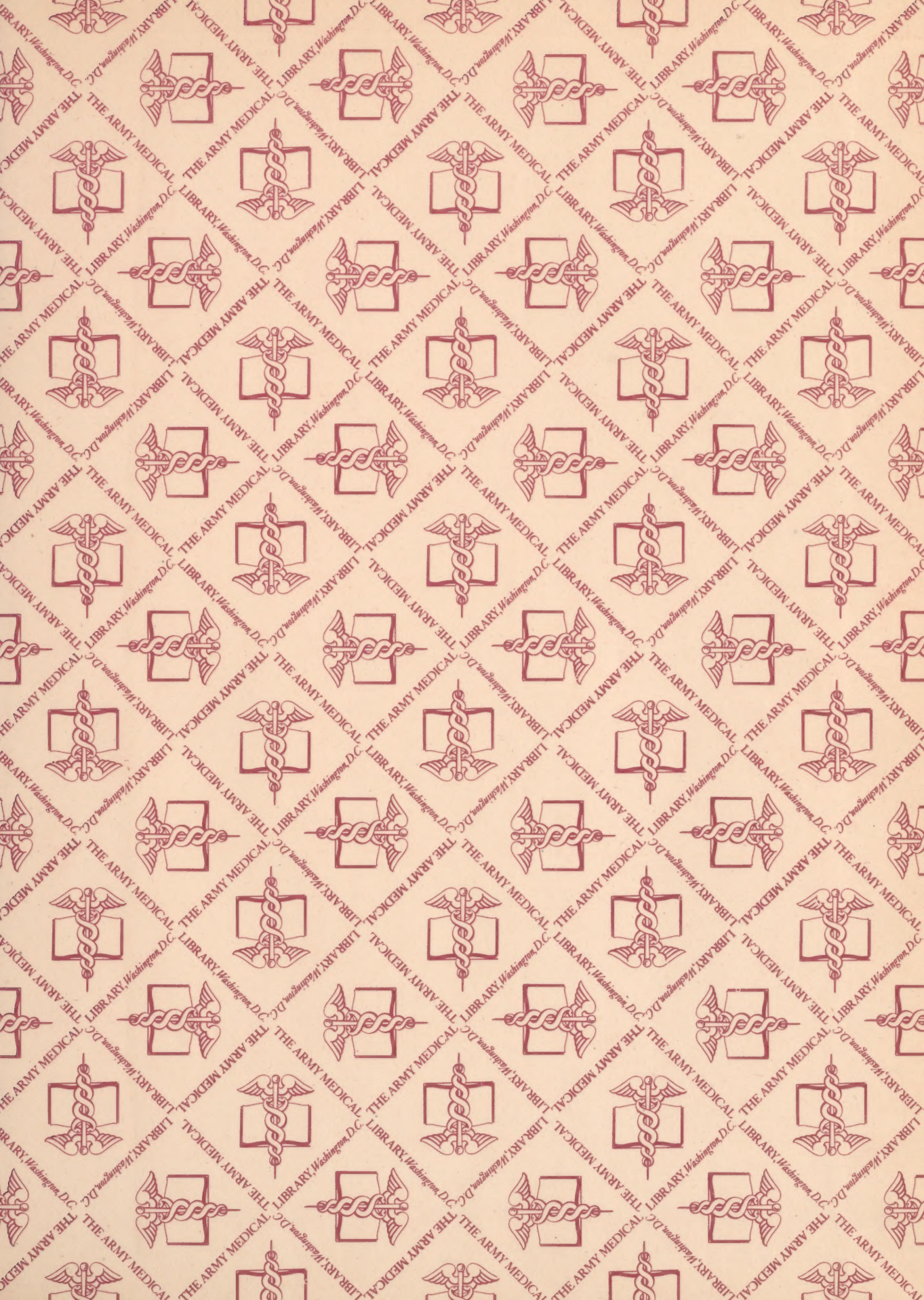
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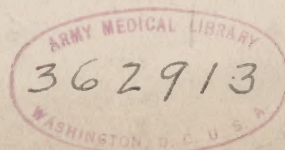
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LETTERMAN GENERAL HOSPITAL

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SPECIAL SERVICE SCHOOL
LETTERMAN GENERAL HOSPITAL
MEDICAL SECTION
FILE NO. 231

FORWARD TO THE STUDENT

The following outline in Nursing for Medical Technicians has been written as a guide for your school work and for your use as a reference book after you have left this school.

One of the purposes of this book is to help you to carry out in a large, well-organized manner your practical training. On returning to your home station, it is hoped that you will find all the facilities that are present at this hospital. It is expected, however, that you will always endeavor to carry on your duties in the best way possible under whatever circumstances you may find yourself.

Given.

Although the major part of your instruction will be in hospital nursing, some attention is given to Surgical Nursing (See Section II).

In this section (I) the following subjects are treated in detail:
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and so on. The nurse, as a rule, spends much time with the patient and the doctor and the nursing is often the important factor in the patient's recovery.

FORWARD TO THE STUDENT

The following outline in Nursing for Medical Technicians has been written as a guide for your school work here and for your use as a reference book after you have left this school.

Many of the procedures described are those as carried out in a large, well-regulated hospital, such as Letterman General Hospital, where you will receive your practical training. On returning to your home stations, it is doubtful that you will find all the facilities that are present at this hospital. It is expected, however, that you will always endeavor to carry on your duties in the best way possible under whatever circumstances you may find yourselves.

Although the major part of your instruction will be in Medical Nursing, some attention is given to Surgical Nursing (See Section II of this outline) in order that you might more easily and readily adapt yourselves to that type of nursing, should the occasion arise.

Nursing is an important and useful occupation. It is a science and an art. The nurse, as a rule, spends much more time with the patient than the doctor and proper nursing is often the important factor in the patient's recovery.

TABLE OF CONTENTS

Foreword to the Student	ii
-----------------------------------	----

I

Outline in Nursing (Medical Section)	<u>Pages</u>
Lecture I. INTRODUCTION	1
Medical Terms	2 - 3
Lectures	
II and III. THE PATIENT'S SURROUNDINGS	4
Ventilation	4 - 6
Cleanliness	6
Neatness	6
Light	6 - 7
Quiet	7
The Patient's Bed	7
The Making of the Bed	8 - 9
Lectures	
IV and V. THE FUNDAMENTAL NURSING CARE OF THE PATIENT	10
General Remarks	10 - 11
Morning and Evening Toilet	11 - 12
Baths	12 - 16
Care of the Mouth	16 - 18
Care of the Skin	18 - 19
Care of the Hair	20
Special Procedures for Comfort	20
Lectures	
VI and VII. THE ELIMINATION OF BODY DISCHARGES	21
General Remarks	21
The Bed Pan	21 - 25

Skin Elimination	26
The Enema	26
Definition	26
Cleansing or Evacuating Enema	26
Articles required	26 - 27
Other Considerations	27 - 29
Procedure	29 - 30
Inability to expel an Enema	30
Examples of Enemas for Cleansing and Evacuation	31
Examples of other Types of Enemas and their Uses	31 - 32
Care of Equipment	32
Lectures VIII and IX: TEMPERATURE, PULSE, RESPIRATION AND BLOOD PRESSURE	33
General Remarks	33
Temperature	33 - 35
Methods of Taking Temperature	35 - 37
Thermometer Tray	37 - 38
Pulse	38
Method of taking pulse	38 - 40
Respiration	40
Method of taking respiration	40 - 42
Blood Pressure	42 - 43
Procedure in taking arterial blood pressure	43
Lectures X, XI and XII: DIETS AND DIET IN THE CARE OF THE SICK	44
General Remarks	44

Proteins	44 - 45
Carbohydrates	45
Fats	46
Water	46
Inorganic Mineral Salts including Sodium Chloride	47
Vitamins	48 - 53
Energy Value of Food and Planning the Diet	53 - 54
Planning an adequate diet	54 - 55
Diet Therapy or Diet in Disease	55 - 57
Hospital Diets	58
Liquid diet	58 - 59
Semi-soft diet	59 - 60
Soft diet	60 - 61
Light diet	61 - 62
Surgical diets	63 - 68
 Lecture XIII. COLLECTION OF SPECIMENS	69
General Remarks	69
General Precautions in the Collecting of Specimens	69 - 70
Urine Specimens	70 - 72
Stool Specimens	72 - 73
Sputum	73 - 74
Smears	74
Other Types of Specimens	74 - 75
Rubber Goods - Care and Use	75
Care of Rubber Goods	75 - 76
Hot Water Bottle	76 - 77

	Ice Cap and Ice Collar	78
	Rubber Rings	78
	Air and Water Beds	78
	Catheters and Rectal Tubes	78
	Stomach Pumps	78
Lecture XIV.	CLINICAL RECORDS AND CHARTING	79
	Definition	79
	Purpose and other explanatory Remarks	79
	Description of Component Parts of Chart	79
	Some Rules for Charting	82
	Nurse's Daily Observations for Charting	82 - 86
	Following are some Symptoms or Signs to be reported to Medical Officer as well as charted	86
	Filing	86
	Signing Entries	86
	Summary Remarks Regarding Charting	86
Lectures XV and XVI.	ADMINISTRATION OF MEDICINE	87
	General Remarks	87
	Important Points to be borne in Mind concerning the Care, Measuring and Administration of Medicines	87 - 89
	Proper Care of Medicine Locker	89 - 90
	Medicine Tray Should Contain:	90
	Medicine List	90
	Medication by Mouth (Oral Administration)	90 - 92
	Medication by Inhalation	92 - 93

Subcutaneous Medication (Hypodermic Injection)	93 - 94
Procedure for Injection: Injection: and After-Care of Equipment	94 - 96
Intramuscular Injection	96 - 97
Intravenous Injection	97 - 98
Lectures XVII and XVIII. NURSING IN COMMUNICABLE DISEASES	99
General Remarks	99
Definitions	99 - 100
Classification	100
Respiratory diseases	100
Intestinal diseases	100
Insect-borne diseases	101
Venereal diseases	101
Miscellaneous diseases	101
Importance of Nursing	101 - 102
Isolation Technique	102 - 106
Special Procedures and Precautions in Certain Diseases	106 - 122
Lecture XIX. SOME COMMONLY USED DRUGS	123
Treatment of Poisons	123
Some Commonly Used Drugs	123 - 135
Treatment of Poisons	135
General	135
Procedure	135 - 136
Lecture XX. REMARKS CONCERNING THE NURSING CARE IN CERTAIN DISEASES	137
Some Respiratory Diseases	137
General Remarks	137

Upper Respiratory Infections	137
Coryza (Acute cold in head)	137
Lower Respiratory Infections	138
Pneumonia	138 - 140
Other Respiratory Diseases	140
Some Circulatory Diseases	140
General Remarks	140
Some Types of Heart Disease that may be seen in Army	140
Diseases characteristically found in Young Soldiers	140
Congenital Heart Disease	140
Acute Rheumatic Fever	141
Functional Heart Disease	141
Diseases characteristically found in Older Soldiers	141
Arteriosclerosis	141 - 142
Arterial Hypertension	142
Heart Failure	142
Nursing Care	143 - 145
Gastro-Intestinal Conditions commonly seen	145
Acute Gastritis, Acute Enteritis, Acute Gastro-enteritis	145 - 146
May be confused with Appendicitis	146
Nursing Care	147
Peptic Ulcer	147 - 148
Appendicitis	148
Constipation	148
Diarrhea	148

Functional Diseases of the Gastro-intestinal Tract	149
Some other Gastro-intestinal Conditions	149

II

Outline in Nursing (Surgical Section)	150
Lecture XXI. INTRODUCTION: SURGICAL TECHNIQUE AND STERILIZATION	150
Introduction	150
Surgical Technique	150 - 151
Sterilization	152 - 160
Lecture XXII. SURGICAL DRESSINGS, SUTURES, LIGATURES, ETC.	161
Surgical Dressings	161 - 163
Sutures and Ligatures	163
Preparation for Operation	164 - 165
Lectures PRE-OPERATIVE AND XXIII and XXIV. POST-OPERATIVE CARE	166
Pre-operative Preparation	166 - 169
Post-operative Care	170 - 173
Catheterization	173
Catheterization Tray (LGH)	174 - 177

PROFESSIONAL SERVICE SCHOOLS
LETTERMAN GENERAL HOSPITAL
MEDICAL SECTION
FILE NO. 231

AN OUTLINE IN NURSING FOR MEDICAL TECHNICIANS

LECTURE I

I. Introduction:-

- A. Army Nurse Corps are on duty at all the large hospitals of the Army. This does not relieve medical soldiers of the responsibility of acquiring a practical knowledge of the principals of nursing.
- B. Members of Army Nurse Corps are not assigned in many of the smaller stations nor to hospital stations in the field. This nursing care must be rendered solely by enlisted men.
- C. Definition of Nursing
 - 1. May be defined as that service to the individual that helps him to attain or maintain a healthy state of mind or body, or where a return to health is not possible, the relief of pain and discomfort.
- D. Conditions most essential to the recovery of the sick.
 - 1. Rest
 - 2. Absolute cleanliness.
 - 3. Abundance of fresh air.
 - 4. Timely administration of treatment prescribed by the medical officer.
- E. Certain attributes or qualifications essential for nurses to have.
 - 1. Physical Qualifications:

- a. Good health, strength, endurance, and strict obedience to the laws of personal hygiene.

2. Mental Qualifications:

- a. Include intelligence, good judgement, a sense of order, truthfulness, obedience, tactfulness and sympathy.

F. Necessity for a knowledge of medical terms,

1. Nurse should be able to express himself in speech and writing so that reports and records of sick and wounded will be clearly and correctly in agreement with Army Regulations.
2. The following is a list of medical terms each student should familiarize himself with during the course of his instruction at this school. Dictionaries are available on the wards and students should avail themselves of this source of information. Either oral or written tests will be given weekly. Other terms will be added to this list from time to time.

(1) Acidosis	(25) Chronic
(2) Acute	(26) Clamp
(3) Adhesion	(27) Collapse
(4) Air-hunger	(28) Coma
(5) Albuminuria	(29) Commode
(6) Alkaline	(30) Congenital
(7) Ambulant, Ambulatory	(31) Constipation
(8) Ampule	(32) Contra-indication
(9) Analysis	(33) Convalescence
(10) Anesthesia	(34) Convulsion
(11) Anorexia	(35) Corpse
(12) Anemia	(36) Crisis
(13) Antiseptic	(37) Cubicle Method
(14) Applicator	(38) Cyanosis
(15) Ascites	(39) Defecation
(16) Autopsy	(40) Delirium
(17) Axilla	(41) Diagnosis
(18) Bandage	(42) Diet
(19) Bed sore	(43) Digital
(20) Blood-pressure	(44) Dropsy
Apparatus	(45) Dyspnea
(21) Cadaver	(46) Edema
(22) Catgut	(47) Elixir
(23) Catheter	(48) Emesis
(24) Cerumen	(49) Epidemic

(50)	Evacuation	(91)	Purge
(51)	Excretion	(92)	Purulent
(52)	Expectoration	(93)	Pus
(53)	Feces	(94)	Quarantine
(54)	Fowler's Position	(95)	Reaction
(55)	Genitals	(96)	Rectal Tube
(56)	Hyper	(97)	Recumbent
(57)	Hypo	(98)	Recurrent
(58)	Immune	(99)	Regurgitation
(59)	Incision	(100)	Relaxation
(60)	Inhalation	(101)	Resuscitate
(61)	Irrigate	(102)	Retching
(62)	Intravenous	(103)	Rigor
(63)	Lavage	(104)	Roentgenology
(64)	Lesion	(105)	Saline
(65)	Ligature	(106)	Salivation
(66)	Lumen	(107)	Scalpel
(67)	Malignant	(108)	Sedative
(68)	Malingeringer	(109)	Slough
(69)	Massage	(110)	Sordes
(70)	Median Line	(111)	Stethoscope
(71)	Micturition	(112)	Stomach-tube
(72)	Morbid	(113)	Stool
(73)	Moribund	(114)	Stupe
(74)	Moron	(115)	Supine
(75)	Mouth gag	(116)	Swab
(76)	Nausea	(117)	Syringe
(77)	Necrosis	(118)	Tepid
(78)	Neuropsychiatry	(119)	Test Tube
(79)	Nits	(120)	Tourniquet
(80)	Normal	(121)	Toxic
(81)	Occlusion	(122)	Transfusion
(82)	Operation	(123)	Traumatic
(83)	Organ	(124)	Trocar
(84)	Organism	(125)	Truss
(85)	Orthopedic	(126)	Urinalysis
(86)	Paracentesis	(127)	Vaccine
(87)	Post-Mortem	(128)	Vascular
(88)	Prone	(129)	Venesection
(89)	Prophylaxis	(130)	Vertigo
(90)	Phychosis	(131)	Viscera

PROFESSIONAL SERVICE SCHOOLS
LETTERMAN GENERAL HOSPITAL
MEDICAL SECTION
FILE NO. 231

AN OUTLINE IN NURSING FOR MEDICAL TECHNICIANS

LECTURE II AND LECTURE III,

THE PATIENTS SURROUNDINGS

I. Ventilation.

A. General Remarks.

1. Ventilation. The process of supplying the necessary quantity of fresh air to rooms and buildings.

B. Factors to be considered.

1. Temperature.

- a. Most houses are overheated.

- b. Ideal indoor temperature may be defined as one that does not make the person sitting in the room feel chilly, but is at the same time not warm enough to enervate him or cause perceptible perspiration.

Should range between 64° F. and 71° F.

Lower temperatures may be indicated when the body is warmly covered, as at night during sleep.

- c. An overheated environment is unwholesome because it decreases the natural energy of the individual, stimulates sweating, which

increases water loss, and produces an abnormal sensitivity to cold.

d. Temperature toleration is affected by the moisture present and the amount of air movements in the atmosphere.

2. Humidity.

a. Means the amount of moisture in the air.

b. 60% humidity ordinarily given as ideal condition.

c. Excessive humidity causes discomfort by clogging one's pores so that evaporation cannot take place.

3. Air Movement and Variability.

a. Currents of air that are of different temperatures have refreshing and wholesome effect on the body. Bring about circulatory changes in the skin and lower the temperature of the skin by increasing evaporation of sweat, and by carrying the air heated by the body away from it. Unless too marked this effect is desirable.

b. Draughts of air.

(1) Patient must be screened or protected from draughts.

4. Air.

a. Impurities, i.e. gases, organic and inorganic dust particles, which may carry microorganisms, and exhaled air of human beings and

animals, which also carries microorganisms

and disagreeable odors.

b. Importance of pure air.

5. Natural Ventilation.

6. Mechanical Ventilation.

7. Some simple ways to ventilate.

a. Room is properly ventilated when fresh air is constantly entering and used air is going out.

(1) Methods of accomplishing this.

II. Cleanliness.

A. General Remarks.

1. Primarily a sanitary safeguard.

2. Hospitals are so constructed that successful sanitation is easily secured.

3. Soap and water - very effective disinfecting agents, as well as cleansers; can be freely used.

B. Methods of Cleaning - (This subject to be discussed more fully in Ward Management lectures).

1. Special methods of cleanliness in infectious disease cases - (This subject to be discussed in detail later when discussing Nursing in infectious diseases.)

III. Neatness.

A. Importance

IV. Light.

A. Sunlight.

1. Importance both as a curative factor in disease and as a method of destroying bacteria, (Disinfection)

B. Artificial lighting.

1. Prevent glare in patient's eyes.

V. Quiet.

A. Noise causes fatigue to patient.

B. Methods of eliminating noises.

VI. The Patient's Bed.

A. General Remarks.

1. During patient's stay in hospital, he may spend all or most of his time in bed.

B. Description of hospital bed.

C. Mattress.

1. Construction.
2. Must be firm, smooth, even and free from lumps.
3. Inner spring mattress. Not desirable for certain orthopedic patients.
4. Good quality hair mattress best when firm support is prime essential.

D. Pillows.

1. Types.

E. Blankets.

1. One to two blankets are used.
2. Bath blanket.
3. Care of blankets.

F. Linen necessary in making a bed.

1. Mattress protector. Heavy muslin bag.
2. Three sheets.
3. Two pillow cases.
4. Drawsheet. Necessary in seriously ill patients and other cases where danger of bed becoming soiled with urine, pus, or discharges of patient, etc.

G. The Making of the Bed.

1. General.

- a. In making the bed, nurse should have all the necessary equipment at hand; he should work quietly and efficiently. Avoid jarring bed.
- b. Dirty linen should not be thrown on floor but should be put in a hamper which has been brought to vicinity of bed.
- c. Avoid exposure of patient. Place screens around the patient.
- d. Corners should be made firmly and neatly, but care should be taken not to draw the top sheet too tightly over the feet. Bed should be made very carefully.
 - (1) For the comfort of the patient.
 - (2) For durability.
 - (3) To present an appearance of order and neatness in the ward.

2. The Closed Bed.
 - a. Definition.
 - b. Articles necessary.
 - c. Procedure in making bed.
3. The Open Bed.
 - a. Definition.
 - b. Procedure in making bed.
4. To Make a bed with a Patient in it.
 - a. Procedure.
5. Ether or Shock Bed.
 - a. Purpose.
 - b. Procedure in making.
6. When to change linen.
 - a. Whenever it is soiled.
 - b. When a patient is discharged.
 - c. At least twice a week, depending upon the nature of the case.
 - d. Daily in infectious cases.

PROFESSIONAL SERVICE SCHOOLS
LETTERMAN GENERAL HOSPITAL
MEDICAL SECTION
FILE NO. 231

AN OUTLINE IN NURSING FOR MEDICAL TECHNICIANS

LECTURES IV AND V

I. The Fundamental Nursing Care of the Patient;

General Remarks:

- A. In nursing or treating patients in the hospital, we are primarily interested in the care and comfort of the patient, the goal being the cure of the disease and the restoration to health.
- B. Responsibilities of nurse in helping patient adjust himself to new environment.
- C. First contact of nurse with patient very important.
 - 1. Meet patient in a quiet, friendly way.
 - 2. Show that you are interested in patient as an individual; that you are eager to make him comfortable and give him the best of care.
 - 3. Good approach will do much to establish the patient's confidence in those into whose care he is entrusting himself, will make the nursing care of the patient easier and more effective.
 - 4. The mental attitude of the patient has a marked influence on his condition. Every effort should be made to keep him interested and cheerful.
- D. Patient will receive daily care, as:
 - 1. Morning bath, including care of mouth, teeth and hair.

2. Making of bed.
3. Preparation for and assistance with meals.
4. Care of bodily discharges.
5. Preparation for sleep.
6. Many additional services which nurse renders are not matters of doctor's orders or routine, but thoughtful contributions to his comfort and well being which the observant nurse will make.

II. Morning and Evening Toilet

A. Morning toilet is the routine care given patients before their breakfast.

1. Purpose:

- a. To clean and refresh the patient after the night.
- b. To make him comfortable and ready for his morning meal.

2. Routine Procedure:

- a. Patient should be given the opportunity to use bed pan or urinal if desired.
- b. Face and hands should be washed, hair combed, and teeth brushed.
- c. Bed should be made comfortable and bedside table or bed made ready for the breakfast tray.

B. Evening toilet is the routine given to all patients before "lights out" at 9 P.M.

1. Purpose:

- a. To prepare patient for night's rest.

2. Routine Procedure:

- a. After evening nourishment the same procedure as

described in morning toilet shall be repeated.

- b. In addition, it is well in most cases to give an alcohol rub. This relaxes patient and promotes sleeping.
- c. Extra bed covering should be placed within easy reach, adequate ventilation afforded, bed lights checked and adjusted, and fresh drinking water provided.

III. Baths.

A. General Remarks:

- 1. Baths are given for cleansing and for therapeutic purposes.

B. Cleansing Bath:

- 1. May be in the form of shower, tub or sponge bath, depending upon the condition of the patient and the nature of his illness.
- 2. A tub or shower bath is usually given to patients who require little or no assistance in bathing.
- 3. A sponge bath, or bed bath, is given to patients who are unable to help themselves and who are confined to bed.
- 4. A cleansing bath is given to promote cleanliness by removing dirt and skin secretions. This aids eliminations of waste products by keeping the pores of the skin open, helps prevent bedsores, and is generally refreshing to the patient.
- 5. At least one bath a day is necessary for an ill patient and in many cases, two or more.

6. Convalescent patients should bathe at least three times a week.

7. Baths should be given before breakfast or one hour after breakfast so as not to interfere with digestion.

8. Articles necessary and procedure in giving a sponge or bed bath:

a. Articles necessary:

(1) Basin half full of water at temperature 105°F.

(2) Necessary bed linen

(3) Bath tray containing

(a) Alcohol, 50%

(b) Boric Acid Solution, 2%

(c) Talcum powder

(d) White Mineral Oil

(e) Paper bag for Waste

(f) Small jar containing gauze for mouth wipes

(g) Tongue Depressors and Applicators

(4) Such articles as towel, wash cloth, soap, toothbrush, hair brush, comb, (personal toilet articles) are usually in possession of each patient on his bedside stand.

9. General Remarks:

a. Move patient's body gradually and as little as possible during the procedure.

b. Each part should be dried thoroughly immediately after washing, and special care should be taken in washing and wiping the umbilicus, between the fingers and toes, between folds of flesh, and about the pubic region.

- c. While giving bath, work briskly, but smoothly and methodically, using long strokes with firm pressure.
- d. Water should not be allowed to drip from the wash cloth and an excessive amount of soap should not be used.
- e. To keep the bath water at an even temperature, add hot water from time to time as necessary, and for that purpose a pitcher of hot water should be on hand.
- f. Temperature of room should be not less than 72°F., the windows closed if the weather is cool and the bed screened to prevent draughts.

10. Procedure in detail -

- a. Screen patient with two screens.
- b. Bring equipment to bedside.
- c. Place bedside chair at foot of bed.
- d. Place towel under chin. If patient is able, have him brush his teeth before removing pillows. If helpless, remove pillows to bedside chair. Turn head toward you. Place towel under chin, brush the teeth, clean the mouth, and lubricate the lips of the patient.
- e. Loosen upper bed clothing at foot and sides.
- f. Fold spread (sheet may be in use as spread) and one blanket and place over pillows on chair.
- g. Remove gown or pajamas.

- h. Protect chest with towel. Before soap is placed on the wash cloth, wash about the eyes.
- i. Place soap on wash cloth and wash face, neck and ears. Rinse cloth and go over surface. Dry thoroughly.
- j. Spread bath towel under further arm. Uncover arm and wash entire arm including axilla. At this point, basin may be placed on the bed so that the patient's hand can be immersed.
- k. Wash the other arm and hand in like manner.
- l. Lay bath towel across chest, hold towel away from chest with one hand, just enough to wash under it without exposing the patient. Rinse and dry.
- m. Move towel down to cover abdomen. Bathe abdomen in same manner. Turn patient on side. Place bath towel well up against back. Bathe back and buttocks. Thoroughly dry the back, rub with 50% alcohol, and powder. Examine prominences for redness. If they do not disappear upon massage, report to Medical Officer.
- n. Turn patient on back and put on upper part of pajamas.
- o. Take basin and discard water; refill.
- p. If patient is able, put feet into tub of water, allowing them to remain for a few minutes.
 - (1) While foot is soaking, put bath towel under thigh; bathe and dry.
 - (2) Then bathe leg and foot.

(3) Remove foot from tub onto bath towel and dry.

Dry carefully between toes.

(4) Cover this lower extremity and do other in same manner.

q. Where foot tub is not used, wash thighs, legs and feet in the same manner as the arms, forearms and hands.

r. Wash pubic region last. Where patient is able, he should do this himself but never fail to attend to this portion of the bath when he is too ill or helpless to cleanse himself.

s. Remove lower part of pajamas.

t. Clean and cut finger and toe nails as necessary, placing a towel under the hands and feet to receive the clippings and prevent their falling in the bed or on the floor.

u. Make lower part of bed as taught.

11. Bathing of very ill Patients.

a. Should be moved as little as possible.

b. Before beginning the bath it might be advisable to put a hot water bottle at the patient's feet and sometimes one near the waistline, as such parts are very easily chilled.

IV. Other Types of Bath, as Sedative Bath and Sitz Bath.

V. Care of the Mouth:

A. Importance

1. Entrance to both respiratory and alimentary tracts.

2. Especially indicated for patients with fevers, uncon-

scious patient or very ill patients.

B. Routine mouth care is given twice a day.

C. Sordes.

1. In cases where the fever is high, there is an insufficiency of the normal oral secretions, resulting in a drying and cracking of the membranes of the mouth and gums. The teeth become covered with residue of food, mucous, dried epithelium, and bacteria. This is known as sordes and requires removal after every meal. Any of the several type mouth washes may be used.

D. Herpes, "Fever Blisters", or "Cold Sores".

1. Are inflammation of the membrane or skin and unless properly cared for may result in ulcers.

E. It is well to cover the lips with either cold cream, lemon juice in glycerine, or boric acid ointment to prevent drying and cracking; this is to be done after the mouth and teeth are well cleansed.

F. Care of Teeth:

1. Majority of patients are able to brush their teeth or have them brushed and to use a mouth wash.
2. Protect bed with a face towel and place kidney basin at side of face.

G. Care of the mouth of a very ill or unresponsive patient.

1. Procedure:

- a. Make a swab by folding a few pieces of gauze in the end of a clamp (curved Kelly Clamp), being careful to fold under all raw edges of the gauze

and to cover the clamp well.

- b. Moisten this with mouth wash and swab thoroughly around the teeth, gums, roof of the mouth and under the tongue. Change the gauze on the clamp as often as it is necessary and be very careful not to bruise or break the mucous membranes.
- c. If patient is able to cooperate, have him rinse the mouth several times with the mouth wash.
- d. Use a toothpick swab to apply Mineral Oil to the lips and apply also to nose (opening of nares) if dry and inclined to crack.
- e. Use small paper bag for the discarded toothpicks, swabs and gauze.

VI. Care of the Skin:

A. In most instances pressure sores or bed sores.

(Decubitus Ulcers) are localized ulcers, resulting as a rule from pressure. Prevented by carefully examining the patient during the morning bath and giving an alcohol rub over the back with 50 per cent alcohol at least twice a day. This stimulates and toughens the skin, makes it less sensitive, and lessens the chance for a destructive process to start.

B. Causes of Pressure.

- 1. Weight of the body on the bed; infrequent turning.
- 2. Bandages, casts, splints or bed clothing.
- 3. Crumbs in the bed or wrinkles in the sheets.

C. Parts most affected.

- 1. Areas over bony prominences where the tissues are thin:

- a. Over scapulae, (shoulder blades).
- b. Over sacrum and coccyx bones.
- c. Over hip bones.
- d. Over elbows.
- e. Over heels.

D. Preventive Measures (Remember prevention is easier than cure).

1. Daily bath for general cleanliness. Dry the skin thoroughly - alcohol rubs.
2. Keep the skin dry and clean at all times.
3. Protect the skin by every means possible; protect from discharges as urine, feces and drainage from surgical wounds.
4. Keep the bed linen clean, dry and free from wrinkles.
5. Remove local and general pressure by means of rubber and cotton rings, pillows and cradles - Air mattresses used at times.
6. Change patient's position frequently if possible.

E. Symptoms and signs of bedsores.

1. Any discoloration of the skin over bony prominence.
2. Pain or stinging sensation.
3. Blisters.
4. Break in skin - beginning bedsore.

F. Treatment

1. Surrounding skin bathed and rubbed to stimulate circulation.
2. Every effort made to relieve pressure.
3. Other measures prescribed by Medical Officer.

VII. Care of the Hair:

- A. Hair should be combed twice a day.
- B. Observe for pediculosis and if present report condition to Medical Officer.

VIII. Special Procedures for Comfort:

- A. Rubber and Air rings.
- B. Cradle.
- C. Support with pillows.
- D. Changing patients' position.

- 02 -

AN OUTLINE IN NURSING FOR MEDICAL TECHNICIANS

LECTURES VI and VII

The Elimination of Body Discharges

I. General Remarks:

- A. The elimination of body discharges or waste products not only a physical supportive measure but contributes greatly to the comfort of a patient.
- B. Body discharges are eliminated principally through the intestine, the urinary system, and the skin.
- C. In sickness as in health, it is desirable that elimination through the intestine, known as defecation, take place at regular times, especially as it tends to largely prevent the constipation which often results from the inactivity and disturbed routine accompanying illness.
- D. Some patients can be allowed toilet privileges, but those who are not must be assisted by the attendant and the use of the bed-pan is required for many such cases.

II. The Bed-Pan

A. Offer the Bed-Pan.

- 1. This is important.
- 2. Usually offered to patients at specific times: as before the morning bath, before and after meals and at bed time. This avoids to a great extent the

necessity for giving the bed-pan at meal
time or during visiting hours.

B. Warm the Bed-Pan -

1. Method.

C. Cover bed-pan with a clean bed-pan cover provided
for that purpose.

- D. Take a sufficient amount of toilet paper, if this is not kept at the bedside.

E. Protect privacy of patient.

1. Screen

F. Assist patient on bed-pan.

1. If patient is able, his head and shoulders may be raised slightly and supported.
2. He should then flex his knees somewhat, while the attendant, supporting his back with his left hand, slips the pan under the buttocks with his right, and carefully adjusts it for the patient's comfort, and the proper protection of the bed.
3. If necessary for the comfort of the patient and protection of the back in cases of extreme emaciation or tender skin, a pad of absorbent cotton should be placed on the back shelf of the pan.

G. Cleanse Patient -

1. After patient has used the pan, cleanse him thoroughly. Wash the region (soap and water) if necessary, and dry it.

2. If patient has used toilet paper himself, he should be given, after removal of pan, the necessary equipment to wash himself.

H. Removal of Bed-Pan -

1. In removing the pan, place one hand under the sacrum for support, raise the buttocks gently, and slip the pan out, taking special care to see that the skin of the back is not rubbed or injured in the procedure.

- I. Cover the bed-pan immediately and take it from the room or ward.

- J. Rearrange the patient's pajamas and the bed linen and air the room or ward.

K. Inspection of contents of bed-pan -

1. Note contents for any abnormal appearance or unusual constituents.

2. Some things to note about feces -

- a. If solid, semi-solid or liquid
- b. Color, for example, if tarry black or clay colored

(1) Importance -

- c. Caliber
- d. Presence or absence of gross blood.

(1) Amount

- (2) Color, for example, if bright red or wine colored.

- (3) Whether blood is intimately mixed with the stool or whether just on outside of feces.

- e. Presence of mucus.
- f. Odor, for example, foul from pus
- g. Amount or result.

(1) This information may be specifically requested if medical officer has ordered an enema.

- h. Undigested food particles -
- i. Tapeworm segments -

L. Record on patient's chart that he had bowel movement.

1. Also record and/or tell medical officer if abnormalities of feces noted or other abnormalities, as:

- a. Any difficulty patient may have experienced while moving bowels -

Patient might have fecal impaction.

- b. If patient has protruding piles or hemorrhoids, or if prolapse of rectum.

- c. Bed sores

- d. Any other abnormalities.

2. Save bed-pan with abnormal feces, if possible, for medical officer to examine.

M. Clean the bed-pan -

1. After emptying the pan, clean it thoroughly with cold water and cleanse with a special bed-pan brush to remove all particles of feces, being very careful to clean it well

under the edge.

2. Then scald or boil it, dry and place in rack.
3. Additional precautions needed in infectious disease cases.
4. Never take a soiled, improperly washed bed-pan to the bedside.

III. The Urinal

A. General Remarks:

1. For patients who are very weak, ill, or unable to help themselves, it is necessary to adjust the urinal.
2. To avoid accident, it should be removed promptly, care being taken not to tip it and spill its contents in the bed, thereby causing added discomfort to the patient and unnecessary labor and loss of time by the attendant.
3. Patients using a urinal should be screened to provide privacy and prevent embarrassment.
4. Covers as for bed-pan should be used.
5. After a urinal has been used and the contents inspected, it should be emptied at once. (Measure and chart amount voided if so ordered)

B. Cleansing -

1. Rinse well, first with cold water and then with hot water.
2. At least once a day bed-pans and urinals should be boiled for 10 or 15 minutes in the bed-pan

sterilizer, and if used for more than one patient they should be sterilized after each use. Those used for patients with infectious diseases should be properly marked, sterilized after use, and kept apart from others. Absolute cleanliness from the use of soap, water, and a scrubbing brush, and occasional thorough soaking in strong soapsuds, is a far surer and more hygienic method of caring for bed-pans and urinals than with the use of strong disinfectants.

IV. Skin Elimination

- A. This elimination, known as perspiration, is benefited by proper skin cleansing.

The Enema

I. Definition:

- A. An enema, or clyster, is the injection of fluid into the lower bowel by way of the rectum for therapeutic or nutritive purposes, and is usually classed as evacuant or retention.

II. Cleansing or Evacuating Enema -

- A. Given usually to cleanse the lower bowel because of constipation or to relieve distension by gas.

III. Articles required:

- A. Enema tray containing:
 - 1. One pitcher - 2 quart

2. One irrigator - enamel ware, or rubber douche bag, fully equipped with tubing, connecting rubes, rectal or colon tube, stopcock or regulator, all connected ready for use. Can use No. 22 or 24 French catheter with a velvet eye - Hard-rubber rectal tube not good.
 3. One pus basin.
 4. Petrolatum for lubricant
 5. Six tongue depressors
 6. Rubber sheeting
 7. One bed-pan cover to spread over equipment
 8. One roll of toilet paper
- B. Bed-pan and cover
 - C. Bath blanket or sheet
 - D. Screens to protect privacy of patient
 - E. Standard

IV. Other Considerations -

- A. Kind of enema and amount of fluid and temperature:
 1. The kind and amount of fluid depends upon the age and condition of the patient, the purpose of the treatment, and the judgment of the medical officer prescribing the enema.
 2. Solutions most commonly given are sodium chloride, sodium bicarbonate, and weak solution of neutral soap or just plain water, as tap water, are given.

3. Medicated evacuating enema includes solutions and mixtures containing purgative salts, glycerine, turpentine, oil, milk, molasses and other substances. The more irritating mixtures are used at times to bring about the elimination of gas.
4. Most hospitals give directions for preparing special enemas.
5. When a medical officer orders a cleansing enema and fails to prescribe the solution, the nurse is probably safe in using normal or physiological saline solution. This enema is made up by adding sodium chloride (table salt) one level teaspoonful (4 grams) to each pint (500 cc) of water.
6. Temperature of enema should be 100 to 105 degrees Fahrenheit, or comfortably warm against the cheek or back of forearm. Temperatures above 110° F should not be used, as they may injure the tissues.
7. Amount of solution to give is variable: quantities varying from 500 cc (one pint) to 2000 cc (2 quarts) are used. (In infants and children very much smaller amounts should be given). For an adult who can go to the toilet, one pint is often sufficient.
8. A great deal of the discomfort that patients suffer during the administration of an enema is caused by the rapid dilatation of the colon; in

other words, do not give enema too rapidly.

V. Procedure:

A. Screen patient.

B. Place rubber sheet covered with draw sheet under patient.

C. Positions:

1. Left lateral (Sims' Position)

a. Draw patient to the right side of the bed, turn him on his left side, drawing up and flexing somewhat the right leg, and drawing the left leg down and back somewhat.

2. Lying on back with legs partly flexed.

a. In cases in which there is a loss of control over the anal sphincter, it is necessary to give enema with patient on bed-pan.

D. Replace upper bedclothes with a blanket or sheet.

E. Expel all air from tube by allowing the solution to flow through.

F. Insertion of rectal tube.

1. Insert 4 to 5 inches after lubricating rectal tube well with petrolatum - higher insertions of the tube unnecessary and involve the possibility of injuring the rectum.

2. Use no force when introducing the tube.

- G. Irrigating can should be hung so that level of fluid is not more than 18 inches above the level of the anus.
- H. Unclamp tubing and let the solution flow into the rectum slowly.
- I. Shut off flow for short time if patient complains of pain. In some cases, desirable to remove tube and ask patient to use the bed-pan. If a good bowel movement results, it may not be necessary to give the remainder of the solution prescribed.
- J. Shut off flow before can is empty.
- K. Remove rectal tube and place in pus basin.
- L. Urge patient to retain enema for 5 minutes, or as long as he can without distress, when it should be freely and voluntarily expelled.
- M. Remove rubber sheet and draw sheet from under patient.
- N. Replace upper bed clothes.
- O. Chart results.
- P. Any abnormality encountered should be sign to discontinue enema and notify medical officer or charge nurse.

VI. Inability to expel an enema.

- A. This may be a dangerous symptom.
- B. Procedure of siphoning off fluid.

VII. Examples of enemas for cleansing and evacuation.

A. The normal Saline (Physiological Saline Enema)

1. Method of preparation.
2. Non-irritating type of enema.

B. The Soap Suds Enema

1. Method of preparation
 - a. Use a mild, white soap, as Ivory Soap
 - b. This enema is irritating

VIII. Examples of other types of enemas and their uses:

A. Retention enema:

1. Given where it is desired to:
 - a. Supply the patient with fluid or food because he is unable to retain anything by mouth, is unconscious, dehydrated, or unable to swallow.
 - b. Administer medicines.
 - c. Administer anesthetics.
 - d. Apply local application to rectum or lower bowel.
2. Amount given varies -
3. Method of administration -

B. Nutritive enemata

1. Have nutritive value

C. Sedative enemata

1. Usually contain some drug or special preparation for quieting or soothing.

D. Carminative enemata

1. Given for expulsion of flatus or gas.

IX. Care of Equipment -

- A. The rectal tube or tip should never be placed in the enema can, but removed from tubing and placed in a receptacle for that purpose.
- B. Rinse with cold water.
- C. Wash with green soap and place in boiling water for 3 minutes.
- D. Particular attention has to be given to equipment used in infectious disease cases.

OUTLINE IN NURSING FOR MEDICAL TECHNICIANS

LECTURE VIII and IX

Temperature, Pulse, Respiration and Blood Pressure

I. General Remarks

- A. Temperature, pulse, respiration and blood pressure findings of great importance in diagnosing and following course of a patient.
- B. In the normal individual the temperature, pulse, and respiration rates have a definite relationship, and the three factors should always be considered together in disease since a disturbance may have a very important meaning.
 1. In health the pulse rate is about four times the respiratory rate.
 2. When the respiratory rate is increased to a third or a half of the pulse rate it is usually an indication of disease of the lungs, such as pneumonia.
- C. Importance of keeping a record of findings.

II. Temperature.

- A. General Remarks.
 1. Temperature of the body is the balance maintained between heat production and heat elimination.
 2. Mechanism of production of heat.
 3. Mechanism for control of a fairly constant temperature.

4. Temperature during day shows normal slight differences and is usually lowest in the early morning, and reaches its highest point in the late afternoon, or early evening. It is also affected by rest and activity. In order to compare temperature from day to day it should be taken at exactly the same hours every day.

5. Disease produces extremes of temperature because it affects the ability of the body to keep a proper balance between the heat produced and the heat eliminated.

B. Abnormal temperatures.

1. Subnormal temperature.

- a. Below 97.5° F. may be regarded as subnormal.
- b. Is often seen in cancer, nephritis, uncompensated heart disease, shock, and wasting diseases.
- c. It is a rough measure of the degree of prostration.

2. Fever.

- a. An elevation of temperature above 99° F.
- b. Is found in many diseases.
- c. Found in disturbances of the heat regulation such as in sunstroke.
- d. Occasionally after hemorrhage.
- e. Temperature of 100° to 101° F. regarded as a low fever; 101° to 103° F. as moderate

fever, 103° to 105° F. as high fever,
and over 105° as hyperpyrexia.

d. Fevers are classified as continued, re-
mittent, or intermittent.

(1) Definitions.

C. The Clinical Thermometer.

1. Instrument used for measuring the temperature
of the body.

2. Description of Thermometer.

a. Heat causes mercury to expand.

b. Fahrenheit scale 94° to 110° .

c. Centigrade scale 34° to 43° .

3. Method used to convert Fahrenheit to Centigrade
and vice versa.

4. Shaking down mercury column.

5. Types of Thermometers.

a. Mouth.

(1) Used for taking both mouth and axillary
temperatures.

b. Rectal.

D. Methods of taking temperature; the normal temperature
and indications for these methods.

1. By Mouth.

a. Normal temperature. 98.6° F. (Some variations
among different individuals)

b. Affected by mouth breathing, low temperature
of the room or atmosphere, dryness of the

mouth, recent smoking and by hot or cold drinks recently taken.

c. Not a safe method to use for children, mental patients or irresponsible patients of any type.

d. Procedure by mouth.

- (1) Shake the thermometer down to 94° F.
- (2) See that patient has not had anything hot or cold in his mouth just before.
- (3) Have patient moisten lips.
- (4) Place thermometer under tongue.
- (5) Keep lips closed for 3 to 5 minutes.
- (6) Remove thermometer, wipe off, read and record temperature.

2. By rectum

a. Normal temperature 99.6° F., but may vary from 99° to 99.8° F.

b. Most accurate method.

c. Used for young children, mental patients, very ill patients, or irresponsible patients of any type.

d. Procedure by rectum.

- (1) Turn patient on side, if possible.
- (2) Shake mercury down to 94° F.
- (3) Thermometer must be held in place for an irresponsible patient of any type.
- (4) Oil bulb and insert in rectum 1 - $1\frac{1}{2}$ inches.
- (5) Let thermometer remain 3 to 5 minutes.

- (6) Remove, wipe end of thermometer with toilet paper, read and record temperature.

3. By axilla.

- a. Normal temperature 97.6° F., but may vary from 97° F. to 97.8° F.
- b. Surface temperature - least accurate.
- c. Only used when other methods cannot be used.
- d. Procedure by axilla.
 - (1) Wipe the axilla dry.
 - (2) Shake mercury down to 94° F.
 - (3) Place bulb in hollow of armpit.
 - (4) Have patient place arms across chest with hand on opposite shoulder.
 - (5) Leave thermometer in 8 to 10 minutes.
 - (6) Remove and record.

4. Repeat taking temperature if there is any doubt about reading.

E. Thermometer Tray.

1. One jar surgically clean cotton.
2. One glass of water.
3. One glass of about 5% green soap solution.
4. One enamel container for thermometers with 5% phenol solution.
5. One enamel container for thermometers with 70% alcohol.

F. Cleaning of Thermometers.

1. Wash thermometers in green soap solution.
2. Rinse with water.
3. Dry with cotton.
4. Soak in phenol solution.
5. Rinse in alcohol.
6. Thoroughly dry with cotton.

III. Pulse

A. Definition.

1. Pulse is the distension or pulsation of the arteries produced by a wave of blood forced through them by the contraction of left ventricle of the heart.

B. Method of taking Pulse.

1. Patient must be at rest, either seated or lying down.
2. Pulse may be taken at any part of the body where an artery passes superficially, particularly over a bony surface. Radial artery most frequently used.
3. Make light pressure over the artery with the first 2 or 3 fingers. Do not use the thumb.
4. When the pulse is felt, observe the second hand on the watch, count the beats for 30 seconds and multiply by two. If there is the slightest doubt about the accuracy of the result verify it by another count.

C. Characteristics to observe.

1. Rate or the number of beats per minute.

a. Rate is affected by age, sex, exercise, excitement, shock, vitality and disease.

b. Normal range.

(1) Males, 60 - 76 minute.

(2) Females, 72 - 92 per minute.

(3) Children, 98 - 130 per minute. This varies a great deal with age. The younger the child the more rapid the pulse.

c. A simple quickening of the pulse rate of 100 or over is known as tachycardia.

d. If the heart rate and pulse rate are slow, below 50 per minute, the condition is called bradycardia.

(1). This may occur in normal individuals, or it may be due to conditions such as exhaustion, toxemia, jaundice, certain heart conditions, certain mental conditions and cerebral hemorrhage.

2. Rhythm, the regularity with which the pulse wave recurs. Pulse may be regular or irregular.

a. Irregularity in rhythm means that the intervals between the beats are not all of equal length and the beats do not follow in regular succession.

3. Volume, the size of the blood stream which is pushed on with each beat of the heart.
4. Tension, the strain or pressure of the full pulse on the walls of the artery.
5. Compressibility.
6. Condition of artery wall.
 - a. Arteriosclerosis.
7. The beats of the normal pulse are almost equal in force and are separated by intervals of almost equal length.
8. In disease there might be an irregularity of the pulse in force or rhythm or both.
9. Some terms used to describe the pulse.
 - a. Rapid pulse, 100 or more per minute.
 - b. Thready pulse, low tension and fast.

IV. Respiration.

A. General Remarks.

1. Respiration consists of an inspiration, or breathing air into the lungs, and an expiration, or exhaling air from the lungs.
2. This is the process whereby the oxygen, which is essential for burning food products is taken into the lungs and carbon dioxide, the waste product, is given off.

B. Method of taking respirations..

1. Have patient at rest and try to count the respirations without the patient's knowledge if possible.

2. Watch the rise and fall of the chest or abdomen, count the respirations for 30 seconds and multiply this number by 2. (In recording respirations it must be remembered that they are in a measure under control of the will, therefore they must be counted without the patient's knowledge.) It is possible to lay the arm across the chest gently while taking the pulse and then, without removing the fingers from the wrist, count the respirations.

C. Characteristics of Respirations.

1. Rate.
 - a. Adults, 16 to 24 per minute.
 - b. Children, 24 to 44 per minute according to age.
2. Apnea - temporary absence of breathing.
3. Dyspnea - difficult, labored breathing.
4. Orthopnea - difficult breathing relieved by the upright position.
5. Hyperpnea - excessively rapid breathing.
6. Cheyne - Stokes respirations - periodic type of rhythmic breathing.

The respirations gradually increase in frequency and intensity up to a certain point, then slowly decrease until they seem to cease entirely; after a short pause the same cycle is repeated.

- a. Occurs in certain diseases of the heart, kidneys and brain.

7. Stertorous breathing - loud snoring noise with inspiration.
8. Edematous breathing - characterized by loud, moist, rattling rales, caused by air passing through the moisture in the air sacs of the lungs.
9. Sighing respirations.
10. Shallow respirations.

V. Blood Pressure.

A. General Remarks.

1. The blood in arteries is confined under pressure; the degree of the pressure depending on the force of the heart's contraction and the condition of the walls of the arteries.
2. Pressure is highest in the larger arteries.
3. Force of the heart beat is lost in the arterioles where the intermittent flow caused by the heart beat is changed into a steady, constant stream. There is no capillary pulse except in pathological conditions.

B. Pathological changes affecting blood pressure.

1. Disease of any part of the circulatory mechanism may cause changes in blood pressure.
2. Disease of the endocrine glands.

3. Increased intracranial pressure as from a skull fracture or brain tumor can cause a rise in blood pressure.

- a. One of the most important aspects of the nursing care of patients immediately following

brain injuries or operations, is the checking of the blood pressure at intervals of 10 to 30 minutes.

4. Low blood pressure.

- a. Shock.
- b. Severe hemorrhage.
- c. Heat exhaustion.

C. Types of apparatus used in measuring blood pressure.

- 1. For measuring arterial blood pressure the mercury manometer is usually employed.
- 2. Sphygmomanometer - spring type of manometer.
- 3. Stethoscope - for hearing sounds in the artery during systole and diastole.

D. Procedure in taking arterial blood pressure.

- 1. Have patient in a comfortable recumbent or sitting posture with the arm supported.
- 2. Explain procedure to the patient.
 - a. Excitement and anxiety raise the blood pressure.
- 3. Expel any air there may be in the cuff of blood pressure apparatus.
- 4. Before inflating the cuff, find the pulsation of the brachial artery and place stethoscope over this point.
- 5. Inflate the cuff with the rubber bulb until the pulsation of the artery that has become audible during the inflation of the cuff is no longer heard; then allow the air to escape very slowly

until the sound reappears.

6. The first reappearance of sound is the blood being forced through the partially compressed vessel during systole. This is the systolic pressure within the blood vessel.
7. Having secured the systolic reading, further deflate the cuff until the sounds change from a loud to a soft thumping. This sound occurs usually shortly before sound fades out entirely though this is not always so. This soft thumping sound is the diastolic pressure within the blood vessel.
8. Considerable practice is needed in order to get accurate readings in all cases and particularly is this so in determining the diastolic pressure. The student is expected to practice taking blood pressures in order to acquire this skill.
9. The average readings in healthy adults vary between 110 and 135 millimeters of mercury for the systolic pressure, and between 60 and 90 millimeters of mercury for the diastolic pressure. The pulse pressure is the difference between the systolic and diastolic pressure readings.

Diets and Diet in the Care of the Sick

I. General Remarks

- A. Diet therapy placed among other remedial agents employed in therapeutics. It is now regarded as a science.
- B. Nutrition - Process of providing the body with the necessary material for maintenance, growth, and renewal of all the body tissues.
- C. Dietetics. - Science which treats of food and its effect on the body in health and disease.
- D. Foods - Substances obtained from the animal, vegetable, and mineral kingdoms which, when taken into the body, yield heat and energy, build and renew tissues, and regulate the body processes and internal conditions.
 - 1. Classified as:
 - a. Proteins
 - b. Carbohydrates
 - c. Fats
 - d. Water
 - e. Inorganic mineral salts
 - f. Vitamins
 - g. Accessary articles of diet which consist of flavors, condiments and stimulants.

II. Proteins

- A. Only class of food containing nitrogen, sulfur and

phosphorus, as well as carbon, hydrogen and oxygen.

- B. Protein must be included in the diet in order to build and repair muscle and other tissues and to replace proteins broken down in the ordinary processes of existence.
- C. The value of protein varies with its amino acid content.
- D. Animal proteins generally contain a better distribution of amino acids than the vegetable proteins.
- E. The usual sources of protein are milk, eggs, cheese, lean meat, fish, and poultry. Good sources of vegetable protein are cereal grains, nuts, beans, peas and other legumes.
- F. Deficiency will stunt growth, promote a secondary anemia or induce nutritional edema.

III. Carbohydrates.

- A. Contain carbon, hydrogen and oxygen.
- B. Most valuable source of energy.
 - 1. Body also obtains energy from fats and proteins but the major sources are carbohydrates.
- C. Usually represents 50 - 75% of the normal diet.
- D. Examples - sugar, syrup, grains, vegetables, and fruits.
- E. May be stored in body as glycogen and adipose tissue.
- F. Essential for the metabolism of fats.
- G. In form of glucose it is the most valuable emergency fluid for the body.

IV. Fats.

- A. Like carbohydrates contain carbon, hydrogen and oxygen, but in different proportions.
- B. Most concentrated source of energy.
- C. Examples - butter, cream, cheese, fat meats, egg yolks.
- D. Essential for all cells.
- E. Acts as a padding both for organs and subcutaneous tissue and is stored as adipose tissue to form a reserve supply.
- F. Fat requirement varies - in normal diet usually makes up 35 to 50% of its calories.
- G. Excess apt to promote indigestion and bound to produce obesity, obesity thought to be a forerunner amongst the middle aged of arteriosclerosis, hypertension, diseased gall bladder and diabetes.

V. Water.

- A. Composed of hydrogen and oxygen.
- B. Makes up two thirds of the body weight.
- C. Most important single item in the diet.
- D. It is necessary to help the main functions of the body, the normal activity of the intestines, the elimination of waste products, and the control of body temperature.
- E. Six to eight glasses a day - normal intake.
- F. Taken in excess it may overtax a diseased heart and kidneys; insufficient intake causes constipation, loss of weight, disturbs the maintenance of normal body temperatures, and causes dehydration.

VI. Inorganic Mineral Salts including Sodium Chloride

A. Calcium

1. Good sources - milk, cheese, egg yolk, dried beans, almonds, peanuts and oranges.
2. Most found in bones and teeth.
3. Essential for coagulation of blood, for normal heart action, and for the contractility of the muscles.
4. Deficiency causes faulty structural development, rickets, dental caries, heart atony, tetany, and excessive bleeding.
5. One pint of milk a day will take care of adult's needs, while one quart a day is necessary for a child.

B. Phosphorus

1. Found in cheese, eggs, whole grain cereals, meat, dried beans and dried prunes.
2. Two thirds in body found in bones and teeth, but also found in every cell.
3. Essential for growth.
4. Insufficient intake results in poorly developed bones and teeth, retarded growth, and rickets.
5. Small amount needed daily for adult (1.32 to 1.5 grams)

C. Iron.

1. Good sources - liver, kidney, heart, beef, egg yolk, oatmeal, almonds, green vegetables and dried fruits.
2. Essential for formation of hemoglobin and lack

causes anemia.

3. 15 milligrams daily necessary for adult.

D. Copper

1. Essential for utilization of iron in body.

2. Found in liver, bran, seafoods, nuts, leafy food, and legumes.

3. Daily requirement very small. (0.0002 grams)

E. Iodine.

1. Found in fish and vegetables of non-goiterous regions.

2. Essential for normal function of the thyroid gland.

3. Amount needed daily not known. Small amount is introduced in drinking water or salt in goiter belt regions.

F. Sodium Chloride or Table Salt.

1. Is necessary at all times.

2. Where excessive perspiration occurs additional salt is needed.

3. Certain disease conditions require the restriction of salt in varying amounts.

VII. Vitamins.

A. General Remarks.

1. Substances absolutely necessary for maintenance of health.

2. Their chemical composition gradually becoming known, pure preparations of most of them have been made from natural sources. Some have been prepared artificially

in the laboratory and much has been learned about
the part they play in life and health.

3. The existence of several vitamins has been established; more are recognized; the existence of others are suspected.

B. Description in detail.

1. Vitamin A.

- a. Called "fat soluble" because it is soluble in fats.
- b. Very little of it is destroyed by ordinary cooking as it is only slightly soluble in water and is very little affected by heat.
- c. Sources - fish oils, liver, fish roe, egg yolk, milk, butter, cheese, escarole, lettuce, carrots, sweet potatoes, apricots and peaches.
- d. Vitamin A stimulates growth and development, and is necessary for well being at all ages.
- e. Protective function of mucous membrane; protective against bacterial infection.
- f. Long-continued deficiency results in arrested growth, defective tooth and bone formation, nutritional night blindness, and loss of reproductive power; deficiency also causes xerophthalmia, a condition of the eyes and lacrimal glands which may result in total blindness.

2. Vitamin B.

a. Now known as "Vitamin B complex." (many related vitamins)

b. Following are some of the known vitamins or factors which compose it.

(1) Vitamin B₁ - Thiamin chloride - anti-neuritic factor.

(a) Water soluble and if foods are cooked in a considerable quantity of water which is thrown away, part of the vitamin B₁ is lost.

(b) Deficiency causes changes in the nervous system resulting in beriberi, loss of appetite, and interference with digestion.

(c) Good sources are whole grain cereals, dried beans, peas, peanuts, pork and liver. If the supply of these foods is limited, 3 tablespoonsful of dried brewer's yeast daily will meet the vitamin B needs.

(2) Vitamin B₂ or G.

(a) Deficiency causes cracks in the corners of the mouth, certain skin diseases, and partial blindness through the production of changes on the cornea of the eye.

(b) The best sources are liver, milk, egg yolk, dried yeast, and green leafy vegetables.

(3) Nicotinic acid (pellagra - preventive factor)

(a) Deficiency results in pellagra.

((1)) Early symptoms of pellagra may be a red tongue or ulcerations in the mouth which are easily mistaken for trench mouth. This may or may not be accompanied by digestive upsets and mental depression.

(b) Good sources are lean meats of all kinds, liver, fish, wheat germ, leafy green vegetables and dried yeast.

3. Vitamin C. - (ascorbic acid), (cevitamic acid).

a. Water soluble - destroyed in cooking.

b. Sources.

(1) Excellent sources are fresh or canned citrus fruits, tomato juice and cabbage.

Other sources are fresh or canned fruits and berries of all kinds, leafy vegetables, and sauerkraut.

c. A deficiency causes scurvy.

(1) Manifests itself early by swollen gums which bleed easily, defective teeth, weakened capillaries, poor bone knitting, tender joints, and lessened resistance

to infection.

4. Vitamin D.

Antirachitic - fat soluble.

- a. Affects the efficient utilization of the bone-building elements. This is especially true when the supply or proportion of calcium and phosphorus is inadequate.

(1) Rickets.

- b. Good sources of vitamin D are sunshine, fish liver oils, and to a lesser extent, cream, butter, eggs, liver, and some fish.

5. Vitamin E.

Antisterility - fat soluble
essential for reproduction.

- a. Source - Many foods.

Germ of wheat grain especially rich source.

6. Vitamin K.

- a. Concerned with the formation and elaboration of prothrombin one of the factors in the coagulation of blood.
- b. Excellent sources of vitamin K are the green leafy vegetables. Tomatoes and hog liver are good sources.

7. All of the above Vitamins can be obtained either in synthetic form or as potent concentrates.

VIII. Energy Value of Food and Planning the Diet.

A. General Remarks.

1. An extremely important function of food is to supply energy.
2. The energy value of food is variously referred to as its fuel or caloric value.
3. In food chemistry the unit used to measure the caloric value of food substances is the large calorie, which, is the amount of heat necessary to raise the temperature of 1 kilogram of distilled water from zero to 1° centigrade.
4. Fuel values for different classes of food:
 - a. 1 gram of protein yields 4 calories.
 - b. 1 gram of carbohydrate yields 4 calories.
 - c. 1 gram of fat yields 9 calories.
5. Food requirements of individuals are affected by several factors, muscular activity, age, size, shape and

weight, influence of ductless glands, pathological conditions, etc.

6. In planning a diet in an individual case it should be remembered that undernutrition lessens the natural power of resistance to diseases, while overeating puts unnecessary strain on the organs of digestion and elimination, forms obesity, and increases the amount of waste products.

B. Planning an adequate diet.

1. The diet outlined below is in accordance with present American standards. Much reduction in any of the categories listed here may result in less than optimum growth and development and the development of mild and unrecognized symptoms of deficiency diseases or a failure to attain the best degree of efficiency and health.
2. An adequate diet for an adult, each day:
 - (a) Milk. - One pint of fluid milk, or its equivalent.
 - (b) Leafy, green, or yellow vegetables. - One or more servings.
 - (c) Tomatoes, oranges, grapefruit, or cabbage. - One or more servings.
 - (d) Potatoes, other vegetables or fruits. - Two or more servings.
 - (e) Eggs. - One.

(f) Lean meat, poultry, or fish. - One or more servings.

(g) Cereals or bread, fats, and sweets, - As needed to satisfy the appetite. At least part of the cereals or breads should be lightly milled or whole grain.

(h) Water. - Six or more glasses.

3. It is preferable to have one raw vegetable and one serving of raw fruit daily. However, in areas in which cholera and dysentery may occur the usual precautions about the use of raw food must be observed.
4. If available, one serving of fruit should be a citrus fruit. Tomatoes, fresh or canned, take much the same place in the diet.

IX. Diet Therapy or Diet in Disease.

A. General Remarks.

1. In feeding the sick it is desirable to carry out the patient's wishes whenever practicable and to a certain extent make allowances for likes and dislikes and certain idiosyncrasies. Be tactful, observing and sympathetic. A nurse who acquaints himself with these facts will be of the greatest help to the medical officer in carrying on his dietary regime.
2. Food should be given at regular intervals.
3. The appetite of the convalescent patient requires catering to, as patients in this condition are apt

to be rather "choosy" or finicky.

4. The sick room should be neat and no dishes, utensils, or food allowed to stand about the room, on the floor, or after using.
5. Food and drink should be served from scrupulously clean utensils.
6. Food must be dainty and appetizing in appearance.
7. When special diets are ordered, the contents of the tray should be checked with the written order.
An error in serving a special diet may cause discomfort, serious illness, or even death.
8. If an order is given to record the intake of food or drink for a patient, it should be kept accurately and be available for the medical officer.
9. Hot food should be served in hot dishes and cold on chilled dishes.

B. Diets used in the treatment of disease are often spoken of by names that show a special composition and often indicate the purpose for which the diet is intended,

1. Examples:
 - a. High - caloric.
 - b. Low - caloric.
 - c. High - roughage.
 - d. Low - residue.
 - e. Salt - free

- f. Salt - poor
- g. High carbohydrate.
- h. Diabetic.
- i. Obesity.

C. Diets suitable for certain diseases and conditions.

- 1. Allergic disturbances
- 2. Anemia
- 3. Cardiac disease.
- 4. Constipation.
- 5. Diarrhea.
- 6. Diabetes.
- 7. Peptic ulcers.
- 8. Nephritic.
- 9. Obesity.
- 10. Fevers.
 - a. In fever the metabolic processes are increased and the power of assimilation is lowered.
 - b. In order to maintain a fever patient properly, the food should be easy to take, easy to digest and readily assimilated.
- 11. Tuberculosis.
 - a. The diet of the tuberculosis patient should be ample, slightly more than the patient's calculated requirements.
 - b. It should be well balanced and not lacking in vitamins, minerals or roughage.

c. Food should be simple, easily digested, and well prepared.

X. Hospital Diets.

A. Medical diets. - Diets are classed as liquids, semi-softs, and lights, based on the degree of digestibility and are given to the patient according to his tolerance for food. A medical liquid is fluid, bland, easily digested, and has a low residue. For a semisoft diet add a few of the most easily digested solids to the liquid diet. The soft diet consists of very digestible solids with the addition of stewed fruits and vegetables in the form of purees. The light diet is practically a normal diet with all fried, highly seasoned, and indigestible foods omitted. The following outlines of foods may be used for each diet.

1. Liquid diet.

(a) Foods. - Allow 1 - 2/3 pints at each meal with three extra nourishments between meals at 10:00 A.M., 2:00 P.M., and 8:00 P.M.

All usual beverages.	Broths.
Cereal gruels	Soups (strained).
Milk - in all forms	Fruit juices.
Wheys	Ice cream (plain)
Albumins.	Ices (plain)

(b) Sample menu.

<u>Breakfast</u>	<u>Dinner</u>	<u>Supper</u>
Orange juice.	Broth	Broth.
Oatmeal gruel	Vanilla ice cream	Lemon albumin
Coffee.	Milk	Cocoa
10:00 A.M.	2:30 P.M.	8:00 P.M.
Eggnog.	Ginger ale with ice cream.	Milk.

(2) Semi-soft diet.

(a) Foods. - Allow 1 - 2/3 pints of food at meal time with nourishments between meals at 10:00 A.M., 2:30 P.M., and 8:00 P.M.

Cooked cereals: Oat meal (well cooked), Farina, Cream of Wheat, Cerevim, Pab-lum--avoid those high in roughage.

Milk toast.

Crackers in milk.

Eggs: Coddled, poached, soft-boiled, soft-scrambled.

Custard: Baked or boiled.

Puddings: Blanc mange, tapioca, simple cream puddings, plain gelatin desserts

Junket.

(b) Sample menu.

<u>Breakfast</u>	<u>Dinner</u>	<u>Supper</u>
Orange juice	Broth	Strained vegetable soup.

(b) Sample Menu. (Continued)

<u>Breakfast</u>	<u>Dinner</u>	<u>Supper</u>
Cream of Wheat	Milk toast	Crackers in milk
Soft-boiled eggs.	Baked custard	Junket.
Coffee	Tea	Cocoa.
10:00 A.M.	2:30 P.M.	8:00 P.M.
Malted Milk	Ginger ale with ice cream	Milk

(3) Soft diet. -

(a) Foods. - Give small, attractive servings.

The following foods may be added to the above lists:

Fruits: Oranges, stewed fruits (without seeds), baked apple, canned peaches or pears.

Cereals: Prepared (not high in roughage.)

Toast: Zwieback, rusks, toasted white bread.

Chicken: White meat (sliced, scalloped, creamed, etc.)

Eggs: Any way except fried or hard-boiled

Crackers: Soda

Brains: Creamed, scalloped (plain or with eggs)

Sweetbreads: Creamed, scalloped, or boiled.

Fish: White (baked, boiled, broiled).

Oysters: Broiled, creamed, scalloped, stewed.

Potatoes: Baked, mashed, riced.

Macaroni: Spaghetti, noodles, and rice.

Asparagus tips.

Celery: Creamed or stewed.

Vegetable purees: Beets, carrots, lima beans, peas, squash, spinach, string beans

Cheese: Cream and cottage.

Fruit whips.

(b) Sample menu.

<u>Breakfast</u>	<u>Dinner</u>	<u>Supper</u>
Sliced orange	Strained cream of	Strained vegetable
Cream of Wheat	celery soup	soup
Poached egg on toast.	Sliced white meat of chicken	Buttered asparagus on toast
Coffee	Mashed potatoes	Baked potato
	Puree peas	Puree carrots
	Toast and butter	Toast and butter
	Prune whip with custard sauce	Junket Cocoa
	Milk	

(4) Light diet.

(a) Foods. - In addition to all foods listed above the following may be given:

Fruits: Fresh (except bananas and melons)
and canned or stewed fruits.

Cereals: All except very coarse cereals.

(See semi-soft diet list.)

Crisp bacon.

Scraped beef.

Lamb chops.

Liver, scalloped or souffled..

Poultry.

Fish (except pickled or fried).

Vegetables: Raw or cooked. Coarse or
strong vegetables must be omitted.

Bread: White, graham, whole wheat.

Simple puddings.

Sponge cake.

Wafers.

Simple salads.

(b) Sample menu.

<u>Breakfast</u>	<u>Dinner</u>	<u>Supper</u>
Sliced orange	Cream of celery	Vegetable soup
Cream of Wheat	soup	Buttered aspara-
Peached egg on	Scraped beef cakes	gus on toast
toast	Mashed potatoes	Baked potato
Crisp bacon	Buttered peas	Lettuce salad
Coffee	Bread and butter	with mayonnaise
	Prune whip with	Bread and butter
	custard sauce	Junket
	Milk	Cocoa

b. Surgical diets.

(1) Preoperative treatment. - As prescribed by the surgeon.

(2) Postoperative treatment. - The surgeon may prescribe the following:

(a) Abdominal cases (except stomach and small and large intestines).

((1)) First day. - After 8 hours, if there is no nausea, allow the patient tea and tap water.

((2)) Second day. - Give four 8-ounce ~~fed-~~ ings, of tea, tap water, and broth

((3)) Third day. - Give a surgical liquid diet after the oil is effective.

((4)) Fourth day. - Soft diet. After this period a regular diet is allowed at the discretion of the ward officer.

(b) Stomach cases (small intestines and colon)

((1)) First, second, and third days. - Give the patient nothing by mouth. Use the Murphy drip 2 hours on and 2 hours off (except in colon cases)

((2)) Fourth day. - Allow 1-ounce quantities of tea, tap water, whey,

and strained orange juice every half hour.

((3)) Fifth day. - Increase the same liquids as above to 4 ounces every 2 hours.

((4)) Sixth day. - Add orange, albumin, and clear, nonirritating broths.

((5)) Seventh day. - Add cereal gruels to the diet. Malted milk and junket are given only when ordered by the doctor.

(c) Gall bladder cases.

((1)) First, second, and third days. - Follow the routine of abdominal cases.

((2)) Fourth day. - Semi-soft diet is given. Milk, cream, and lemon must be restricted.

((3)) Fifth day. - Give a soft diet, gradually introducing butter and cream. Restrict milk, cream, soups, cocoa, and eggnogs. After the fifth day additional diet orders should be given by the ward surgeon. On a regular gall bladder diet restrict gravies, fried

foods, pastries, gaseous vegetables, and all salads.

(d) Liquids.

Broths.	Coffee.
Bouillon	Whey.
Beef tea.	Albumin.
Beef juice.	Fruit juices,
Tea.	Ginger ale.

Avoid milk in any form.

Liquid diet should be administered every 2 hours from 7 A.M. to 8 P.M.

(e) Semi-soft.

((1)) Foods. - Useful in transferring all cases from liquid to solid foods. Feedings six times daily. From 500 to 600 grams at meal time with 200 cubic centimeters between meals may be allowed.

Liquids of all sorts.

Broth: Thickened, strained.

Soups: Thickened, strained.

Eggs: Poached, coddled, soft-boiled.

Poultry and beef jellies.

Cottage cheese.

Plain gelatins.

Fine cereals.

Oatmeal; Strained,

Tapioca,

Junket,

Custards,

Blanc manges.

Plain sherbets,

Plain ice cream,

((2)) Sample Menu.

<u>Breakfast</u>	<u>Dinner</u>	<u>Supper</u>
Orange juice	Broth	Broth,
Cream of Wheat	Baked custard	Jello
Coffee	Tea	Tea
10:00 A.M.	3:00 P.M.	8:00 P.M.
Eggnog.	Lemonade,	Milk.

(f) Soft.

((1)) Foods. - Food six times daily.

Carefully guard total amounts.

Any liquid or semi-soft foods,

Cream of Wheat, Quick oats,

Cerevim, Pablum (cooked cereals)

Toast

Butter

Apples; Stewed or baked (no

Skin)

Puree stewed fruits,

((2)) Sample menu.

<u>Breakfast</u>	<u>Dinner</u>	<u>Supper</u>
Puree prunes	Broth	Broth
Cream of Wheat	Cottage cheese	Poached egg on
Toast and butter	Toast and butter	toast
Coffee	Baked custard	Jello
	Tea	Tea
10:00 A.M.	3:00 P.M.	8:00 P.M.
Orange juice	Lemonade	Fruit juice

(g) Light.

((1)) Foods.

Potatoes: Mashed

or baked

Chicken

Sweetbreads

Lamb chops

White fish

Oysters.

Stewed and canned fruits (except
pineapple, figs, and raisins)

Oranges

No salads, raw vegetables, or raw
fruits (except oranges)

Stewed celery.

Asparagus tips.

Spinach

Beets

Carrots

String beans

Peas

Macaroni, spaghetti, noodles

Brains

Bacon: Broiled

(2) Sample menu.

<u>Breakfast</u>	<u>Dinner</u>	<u>Supper</u>
Stewed prunes	Chicken broth	Cream celery soup
Cream of Wheat	Broiled lamb	Buttered aspara-
Poached egg on	chop	gus with toast
toast	Mashed potatoes	points
Broiled bacon	Buttered string	Baked potato
Coffee	beans	Buttered carrots
	Toast and butter	Toast and
	Baked custard	butter
	Milk	Jello, Fruit
		Milk.

LECTURE XIII

COLLECTION OF SPECIMENS

I. General Remarks.

- A. Collection of specimens is one of the important duties of a ward attendant.
- B. They should be collected in the correct manner, and sent to the right place in the laboratory at the proper time.
- C. In most Army hospitals it is customary for the night ward attendants to collect the routine specimens, such as urine, feces, and sputum, the first thing in the morning and take them to the laboratory as they go off duty.
- D. The object in collecting specimens is to assist in the diagnosis, to help determine the progress of the disease with which the patient is suffering, and to furnish information regarding the results of the treatment employed.

II. General Precautions in the Collecting of Specimens.

- A. It is essential that they be so marked that they cannot be confused with other similiar specimens.
- B. Never use a cracked receptacle.
- C. Collect the specimen in the right receptacle, use the right label, send the right amount, collect and send in proper manner at the right time, to the right place in the laboratory.
- D. Have the receptacle thoroughly clean (sterile when so

required), and well stoppered to avoid contamination of the outside.

- E. With all specimens send the routine laboratory request blank properly filled out.
- F. Never leave unsightly specimens in the ward, nor uncovered in the latrine; but when necessary, while further collection is being made, keep properly covered in a remote part of the latrine.
- G. Always take specimens to the laboratory at the earliest possible time.

III. Urine Specimens.

A. There are several designations for urine specimens as:

- 1. Routine specimens.
- 2. 24-hour specimen.
- 3. Day specimen.
- 4. Night specimen.
- 5. Sterile specimen.
- 6. "Stat" or immediate specimen.

B. The routine or single specimen, is routinely obtained from every patient admitted to Army hospitals.

- 1. It is obtained in the morning, passed directly into the proper container, and at least 4 ounces are sent to the laboratory.

C. 24-hour specimen.

- 1. Occasionally it is desirable to save the entire amount of urine passed in 24 hours.

2. At least a 4,000-cc. container should be used for this purpose.
3. A definite hour in the morning for the first voiding should be fixed, the first urine being discarded. All urine passed during the next 24 hours including that which can be passed at the end of the period should be saved, properly mixed, and measured. At least 4 ounces of this should be sent to the laboratory after marking on the slip the amount and the notation "24-hour specimen."
4. Occasionally the urine is divided into day and night specimens, the day specimens consisting of all the urine voided in the 12 hour period from 7:00 A.M. to 7:00 P.M. and the night specimen being collected from 7:00 P.M. to 7:00 A.M. A portion of these specimens are likewise sent to the laboratory after placing on laboratory slip the amount and proper notations, "day urine" and "night urine."

D. Such information should be on label as follows:

1. Patient's name (including middle initial if patient has one).
2. Ward or room.
3. Examination desired.
4. Date specimen was voided; hour also if this is important.

5. Medical Officer's name who is requesting the examination.

E. Sterile Urine Specimen.

1. Those collected by catheterization.
2. Those collected without catheterization.

a. Method of collection:

- (1) Have sterile container with sterile stopper.
- (2) Bathe the patient's genitals and pubic region thoroughly with soap and water, remove all traces of soap.
- (3) Then bathe the parts with 3 percent boric acid solution.
- (4) Instruct the patient to void into the sterile container, rendering him all necessary assistance.
- (5) Replace sterile stopper which has been kept uncontaminated; mark specimen "sterile," in addition to filling out request blank in routine manner, and send it to the laboratory.

F. Other urine specimens.

1. Three-glass specimen.

G. Urine preservatives.

1. 5% toluene.

IV. Stool Specimens.

A. How Collected.

1. Usually obtained the first thing in the morning.

2. Usually collected in a clean bedpan.
3. A portion of feces is transferred to a cardboard sputum cup with a clean tongue blade.
4. Specimen then labeled with name, date, laboratory, medical officer's name, ward or room number, and taken immediately to the laboratory.
5. Liquid stool specimen can be sent to the laboratory in a specimen bottle.
6. When specimens of stools which are to be examined for typhoid, cholera or tubercle bacilli, or other micro-organisms of an actively infectious nature are collected they should be handled with extreme care in order to keep the cover and outside of the container free from particles of the specimen and to prevent infecting the ones who handle them. Specimens should be marked "infectious" in addition to the routine label.

V. Sputum.

A. How collected.

1. Prepare and properly label the specimen box or container the night before, giving the patient any necessary instructions.
2. Be sure the container is clean; use no disinfectants.
3. Have the container, usually a Petri dish, sterile when a sterile specimen is ordered.
4. In the early morning before breakfast have the patient rinse his mouth well with plain water, expectorating

with this all excess of saliva; then instruct him to cough as deeply as possible in order to obtain a specimen from the bronchi or the lungs to expectorate directly into the sputum cup or dish, taking care that none is deposited on cover or sides of the container.

B. Twenty-four hour specimen.

1. Used for differential diagnosis.

VI. Smears.

A. Types.

1. Gonorrheal smears.

- a. Detailed instructions for procuring specimens for gonorrheal smears usually are given by the medical officer in charge of such cases or by some other competent person designated by him.
- b. Special precautions should be taken by the attendant when procuring such specimens to prevent infecting himself and to carefully protect his eyes from this virulent infection, which often causes blindness.

2. Other types.

VII. Other types of specimens.

A. Types.

1. Spinal fluid.

- a. Great care should be exercised that spinal fluid specimen does not become lost, misplaced or destroyed in any way. It should be promptly delivered

to the laboratory in a properly labeled container,
designated for that purpose.

2. Other specimens which might be obtained are fluid aspirated from the chest or peritoneal cavity, stomach contents, specimens of pus in cases of infection, and throat cultures.

RUBBER GOODS -- CARE AND USE

I. Care of Rubber Goods.

- A. Rubber sheets and other rubber articles such as air cushions, hot water bottles, ice-bags, etc., are cleaned best with warm (not hot) water and soap; after washing they should be rinsed well as soap tends to destroy rubber.
- B. They should be wiped with a disinfectant solution and hung up in a cool place to dry.
- C. Rubber sheets and operating pads should be rolled instead of folded before being stored away, and under no circumstances should they be put away until thoroughly dried.
- D. Remember that heat, acids, and fats destroy rubber.
- E. Clips on rubber tubing should be unfastened when not in use.
- F. If it is at all possible, rubber articles should be cleaned immediately after use.
- G. Sterilization of rubber goods.
 1. In the hospital it is necessary to sterilize many rubber articles, although this should not be done

oftener than aseptic conditions require.

2. Sterilization at the lowest effective temperature and over the shortest period of time that gives adequate results is best.
3. As soon as articles such as hot water bottles and ice bags are sterilized they should be thoroughly dried, inflated, and left hanging; if stored, gauze or paper may be used to prevent the sides from sticking together.
4. Sterilize hard-rubber articles and those made of silk and rubber by means of chemicals.
5. Rubber gloves may be boiled; they should be dried on one side, turned, and left hanging until dry. Sometimes gloves are sterilized by autoclaving in which event they should be powdered after drying, and placed in cases, having cuffs turned down at top and both thumbs toward the center of the case. (the actual details of autoclaving are to be taken up in course in Surgical Nursing.)

II. Hot-water Bottle.

A. To fill hot-water bottle.

1. Articles necessary.
 - a. Hot-water bottle and cover.
 - b. Pitcher.
 - c. Bath thermometer.
2. Procedure.
 - a. Take chill out of bag by pouring a little hot

water in it from pitcher and empty.

- b. Test water in pitcher having temperature of 125 degrees F., (dairy type thermometer) Temperature, however, could vary from 120° F and 150° F., depending upon the thickness of the cover used, the area to which the application is made and the condition of the patient and the skin. Hot water bottle should be tested against the back of the nurse's forearm or cheek, in order that it will not burn the patient. IT MUST NEVER BE HOT ENOUGH TO BURN THE PATIENT, SHOULD THE BAG LEAK OR THE BAG BURST. TO AVOID SUCH SERIOUS AND INEXCUSABLE ACCIDENTS, BEFORE USE, THE BAG MUST BE CAREFULLY EXAMINED FOR LEAKAGE AND FOR WEAK PLACES IN THE RUBBER,
- c. THE BAG MUST ALWAYS BE COMPLETELY COVERED WITH A SUITABLE COVER.
- d. Fill the bag half full, expel air, and put on cap. If the patient must support the weight of the bag, as when applied to the abdomen, it must not be filled more than one-third full, and even at times the patient may not be able to bear this much weight without support.
- e. Check to see patient is not burned. Unconscious patients, patients in shock, patients seriously ill, patients with paralysis are apt to get burned.

III. Ice Cap and Ice Collar.

A. To fill ice cap and ice collar.

1. Articles necessary.

2. Procedure.

a. Put finely crushed ice in the cap or collar with a spoon.

b. Fill half full.

c. Expel air, put on top.

d. Cover before applying.

e. Put away dry and containing small amount of air.

IV. Rubber Rings.

A. Use.

B. When using fill half full of air.

C. After using, disinfect and put away containing small amount of air.

V. Air and Water Beds.

A. Place over bed mattress and always cover with rubber sheet. Have valve at foot of bed.

B. Protect with side boards.

C. Put away containing small amount of air.

VI. Catheters and Rectal Tubes.

A. Boil before using. Can also be sterilized chemically.

B. After using wash in soapy water, boil and hang up to dry.

VII. Stomach Pumps.

A. Place in ice water 10 minutes before using, if time permits.

B. After using, wash in warm soapy water, boil, and hang up to dry.

AN OUTLINE IN NURSING FOR MEDICAL TECHNICIANS

LECTURE XIV

CLINICAL RECORDS AND CHARTING

I. Definition

- A. Charting is the art of record making.

II. Purpose; and other Explanatory Remarks.

- A. To provide a clear and concise record of:
 - 1. The patient's condition.
 - 2. The treatment he is receiving.
 - 3. The effect of the treatment upon the patient.
- B. Not infrequently they are later used for study and research, and occasionally they are used as legal evidence in court.
- C. For reasons mentioned above, records should be free from erasures, they should be clear and concise, and they should be printed both for uniform appearance and for legibility.
- D. Charts are compiled during the patient's stay in the hospital. They are customarily filed and kept indefinitely.

III. Description of Component Parts of Charts.

- A. Front sheet or initial sheet of chart, (55a).
 - 1. Explanation and importance of filling out accurately.
- B. Sheets pertaining to history and physical examination, of patient.
 - 1. Usually the medical officer's responsibility.

C. Sheets pertaining to nursing care and treatment.

1. General Remarks:

- a. The nurse who is recording must have sufficient knowledge to be aware of the fact that a seemingly trivial detail may have vital significance and may be an important clue which may help the physician in his diagnosis and treatment.
- b. Nurse should train himself to recognize the normal.

2. The temperature chart

- a. The temperature chart may be a graphic chart, which shows not only a picture of the temperature curve, but the rate of the pulse and the relationship of temperature and pulse to each other. In some instances the respirations are also charted graphically, but more often they are recorded in figures at the bottom of the page.
- b. Temperature charts should be kept for all patients during their entire stay in the hospital.
- c. Graphic charts are made by placing dots at the appropriate places on the forms and connecting the dots by straight lines. Temperature, pulse and respirations are usually charted every 4 hours, 8 A.M., 12 P.M., 4 P.M., etc., but they may be recorded every 2 hours, and sometimes as on convalescent patients, only twice a day.
- d. A space for urine and a space for stools may be

present on temperature chart for recording of them. Regardless of whether present on charts, nurse's notes should include remarks concerning these functions as well as a recording of the weight of the patient.

3. Treatment sheet.

a. Description.

b. Treatments and medications should be recorded together with time that such treatments or medications were given.

c. Nurse's treatment sheet or other sheet designated to be used by nurse should also contain such notes by the nurse as follows:

(1) Signs and symptoms observed by the nurse.

(2) Result of treatments and medications.

(3) The patient's diet and his appetite.

(4) The amount and kind of sleep.

(5) The patient's general condition.

(6) Mental and physical reactions of the patient to his surroundings.

(7) Admission notes:

(a) Date and hour of admission.

(b) Manner of admission, walked (ambulatory), wheel chair, stretcher.

(c) Condition of body - Pediculi observed - whether any evidence of any venereal

disease or other infectious communicable diseases.

(d) T. P. R.

(e) Patient's complaints.

(f) Nurse's observation on admission:

((1)) Bed sores, location, size, character, whether superficial or sloughing.

((2)) Peculiarities of speech or gait.

((3)) Any indication of mental disturbance.

(g) By whom seen (medical officer's name).

D. Other parts of Chart.

IV. Some Rules for Charting.

A. All nurse's charting should be printed, not written.

B. The temperature chart starts with the patient's admission to the hospital, and the words "on admission" should be printed in.

C. The temperature is taken and recorded 8-12-4 (depending upon the division).

D. The hours are charted in black during the day and in red during the night.

E. At 12 A.M., a red line should be drawn perpendicularly to separate the days on a q. 4 h. or q. 2 h. chart.

V. Nurses' daily observations for charting.

A. Digestive System.

1. Nausea.
 - a. Time and severity - slight, or extreme with retching, etc.
 - b. Cause of nausea if it can be ascertained.
2. Vomiting.
 - a. Time
 - b. Amount
 - c. Color
 - d. Consistency
 - e. Constituents - food remains, bile, fluids, blood, etc.
 - f. Odor.
 - g. Reaction if ordered to be tested.
 - h. Cause of vomiting, if known, viz., after medicine, after eating fruit, etc. Reasons patient may give for it.
3. Stools.
 - a. Preserve all stools containing blood or anything unusual or suspicious.
 - b. Note any change of color.
 - c. In jaundiced patients state whether or not stools are clay colored.
4. Distension of abdomen.
 - a. Time and degree of distension, slight, much, marked, etc., discomfort, pain, etc.
 - b. Measures applied for relief and results.

B. Respiratory System

1. Breathing - note any change, such as:

- a. Dyspnea
- b. Orthopnea
- c. Cheyne-Stokes.

2. Cough.

- a. Time - morning, afternoon, all day.
- b. Severity.

3. Expectoration.

- a. Color - rusty, etc.
- b. Constituents - blood, etc.
- c. Consistency - froth, heavy, tenacious, etc.
- d. Odor.
- e. Quantity (estimate fairly accurately).

C. Nervous System.

1. Restlessness

2. Irrational

3. Delirium

- a. Active - noisy. Patient trying to get out of bed.
- b. Measures taken to relieve, restraint, etc., and effects. (Note: Mechanical restraints should be ordered by the medical officer.)

4. Stupor

5. Coma

6. Convulsions

- a. Onset, how, when, aura.

b. General, or only partial, and parts involved.

c. Duration.

d. Clonic or tonic

7. Hiccough

8. Eyes.

a. Unequal pupils

b. Markedly contracted or dilated pupils.

D. General Symptoms, and Signs.

1. Pain

a. Location

b. Time

c. Duration

d. Character - sharp, dull, darting, shooting, knife-like, etc.

e. Any measures applied for relief and results.

2. Chills

a. Duration

b. Severity.

3. Skin

a. Rash - character, etc.

b. Marked sweating or dryness.

c. Jaundice

d. Bed sores

(1) Chart any red areas on back or over body prominences.

(2) Chart if getting larger.

4. Medication

- a. Result, for example, if medicine is given for cough, chart whether medicine relieved condition or not.
- b. Refusal to take medicine prescribed.

VI. Following are some Symptoms or Signs to be Reported to Medical Officer as well as Charted.

- A. Any sudden rise in temperature, or a very high temperature.
- B. Any marked change in the rate and character of the pulse, weakness, irregularity or difficulty in counting.
- C. Any marked change in rate or character of respiration.
- D. Vomiting of blood.
- E. Hemorrhage of the bowels.
- F. Abdominal pain - might be surgical emergency.
- G. Abdominal distension.
- H. Retention or suppression of urine.
- I. Unusual or severe pain.
- J. Shock.
- K. Twitchings and convulsions.
- L. Drowsiness and coma.
- M. Always report any change in condition when in doubt.

VII. Filing.

- A. Importance of doing accurately, and for keeping up to date.

VIII. Signing Entries.

- A. Importance.

IX. Summary Remarks Regarding Charting.

- A. Records are essential to bring together and to keep in an orderly form all of the reports and comments necessary to give a complete picture of the patient, and to assure some continuity in the care that is given.

ADMINISTRATION OF MEDICINES

I. General Remarks

- A. This procedure is one of the most important parts of proper nursing and is accompanied by a certain element of danger.
- B. The person giving medicines must be trustworthy and realize his responsibility.
- C. In order to avert mistakes, always have an order book in the ward. Follow orders for the administration of medicines as prescribed by the ward officer in the order book.

II. Important Points to be Borne in Mind Concerning the Care, Measuring, and Administration of Medicines.

- A. Keep the medicine cabinet locked. The nurse in charge should have the keys in his possession.
- B. Never keep medicines in unmarked bottles and do not use a dose of medicine that has been left in an unmarked glass.
- C. The person in charge of the medicine cabinet should examine its contents daily and make sure that there is an adequate amount of all necessary drugs on hand. Medicines should not be ordered in large quantities for many kinds deteriorate with age. Drugs that have undergone any change in color, odor, or consistency should not be used without first consulting the ward officer.
- D. Keep oils in a cool place. Also many of the antitoxine, vaccines, and drugs derived from animal glands need to be kept cold.
- E. Give medicines on time.
- F. While measuring medicines, never think of anything but the work on

- hand and never speak to anyone or allow anyone to speak to you.
- G. Measure exactly; never give a patient a drop more or less than the amount ordered.
 - H. While pouring a medicine, hold the glass with the mark of the quantity you require on a level with your eye; if the mark is above your eye, you will give too little, if below, too much.
 - I. Read the label on the bottle three times before taking it from the shelf, and before and after pouring out the medicine.
 - J. Shake the bottle before pouring out medicines that are not perfectly clear or that contain a sediment unless the label prescribes otherwise.
 - K. To avoid defacing the label while pouring a medicine, hold the bottle so that the label will be on the upper side, but do not let your hand come in contact with it, and before replacing the bottle on the shelf, wipe the rim of the bottle with a piece of gauze kept for that purpose.
 - L. Recork or recap a bottle immediately after pouring out the drug, for many medicines contain volatile substances and will thus become either stronger or weaker if left uncorked.
 - M. Never mix or give at the same time different medicines.
 - N. Do not dilute syrup cough medicines, because dilution will minimize the soothing effect of the syrup on the mucous membrane.
 - O. Make doses of medicine as palatable as possible. Therefore, have the water used for dilution either very hot or very cold.
 - P. Give acids and medicines containing iron through a tube, because acids may corrode the teeth and iron discolors them.
 - Q. Never give food, drink, or medicine by mouth to an unconscious patient. Medicine should not be administered to delirious patients except in presence of a medical officer who may judge whether the medicine has been properly swallowed.

- R. Never allow one patient to carry medicine to another.
- S. Do not leave a patient until the medicine is swallowed.
- T. Never record a medicine as given until the patient has taken it.

III. Proper Care of Medicine Locker.

A. Cleanliness

1. Clean at regular intervals.
2. Start at top and work down.
3. Remove only a few bottles at a time so they can be replaced quickly if locker must be locked.
4. Each bottle should be wiped, especially the neck and rim.
5. Be sure stopper is properly in place.

B. Arrangement of Contents.

1. Poison and drugs for external use should be kept on separate shelves.
2. Opiates and alcoholic stimulants should not be kept in locker as a rule.
 - a. Careful record of what has been used.
3. Eye drugs should be arranged from those used by mouth or externally.
4. Medicines injured by heat, as sera, vaccines, insulin, cod-liver oil, and suppositories should be kept in an ice box.
5. Medicines injured by light should be kept in dark bottle and a dark place.
6. Emergency stimulants should be kept in a prominent easily accessible place. These drugs should always be in the same place so no time will be lost in finding them.

C. Replenishment of Drugs

D. Bottles

1. Uniform shape and size desirable.
 2. All bottles containing poisons should be so labeled.
 3. Pour from side of the bottle opposite the label.
- E. Keep locker locked to prevent accidents and meddling.

IV. Medicine Tray Should Contain:

- A. Pitcher for cold or iced water.
- B. Medicine glasses.
- C. Glass, mixing rod.
- D. Spoon.
- E. Pieces of Gauze.
- F. Medicine tickets.
 1. Squares or oblongs of cardboard on which is listed patient's name, medicine, dose, and time due.
 2. When not in use they are kept in compartments representing the different hours.

V. Medicine List

- A. A list with each name, medicine, dose, time due, and location of patient. It is hung or posted in, or near, the medicine locker.

VI. Medication by Mouth (Oral Administration).

A. General Instructions

1. Make the dose as palatable as possible.
2. Never record a dose as given until you have seen the patient take it.

B. Articles Necessary:

1. Medicine Tray.
2. Medicine glass for each medication.
3. Medicine card for each medication.

4. Gauze wipes.
5. Small glass pitcher of water.
6. Orange slices if necessary.

C. Preparation of Equipment:

1. Wash your hands.
2. Secure medicine cards. There is a card for each medicine to be given. The card is made out with the following information:
Name of patient, name of drug and dose, hours of administration.
3. Place card on tray, read name and medication.
4. Find medicine on shelf, take bottle from shelf, shake it and read the label the first time.
5. Compare label with card.
6. Remove cork between first and second fingers. Hold bottle so that label is in palm of right hand.
7. Hold medicine glass in left hand so that the mark of the prescribed amount is on a level with the eye and with thumb nail on desired mark.
8. Pour in enough drug to reach the line designating the prescribed amount. Read the label a second time.
9. Wipe the rim of the bottle, replace cork, and replace bottle on shelf. Read the label the third time.
10. Dilute medication to approximately 1/2 ounce unless contraindicated.
11. Read label on medicine card and place medicine glass over the card on the tray.
12. Pour all medications in same way.
13. Tablets, capsules and powders should be put into medicine glass.
14. Carry medication tray to ward.

2. Method.

- a. The medicine used is put in the water, the water boiled and the resulting steam carries the medicine.
- b. Importance of directing a column of steam to patient's nose.
- c. Croup tent.

3. Precautions.

4. Chart:

- a. Time - kind of inhalation and duration of treatment.
- b. State whether patient was relieved or not.

C. Dry (gaseous) Inhalations.

1. Oxygen.

- a. Importance.

2. Amyl Nitrite.

3. Ether.

4. Chloroform.

VIII. Subcutaneous Medication (Hypodermic Injection).

A. Definition.

B. Uses.

1. For prompt action - as morphine.
2. Because patient can't take medicine by other routes.
 - a. Water - because of emesis, etc.
 - b. Unconsciousness.
3. For local anesthesia.
4. Because medicine is destroyed by stomach juice or is not absorbed - as insulin.

C. Important Points to Remember when using Subcutaneous Injection.

1. Avoid injury to nerves and blood vessels.

2. Do not introduce infection.
 3. Do not bruise tissue unduly.
 4. Do not break needle off in the tissue.
- D. Procedure for Injection; Injection; and After-Care of Equipment.
1. Scrub hands thoroughly.
 2. Inspect syringes and needles.
 - a. Does plunger fit - check number of plunger and barrel.
 - b. Is needle point sharp?
 - c. Is needle strong?
 - d. Is it rusty?
 - e. Is it plugged?
 3. Prepare needle.
 - a. Remove wire from needle.
 - b. Put needle in spoon, cover it with water.
 - c. Boil over alcohol flame for one minute.
 - d. Place needle on a sterile cotton pledget, moistened with alcohol that you have removed from a container of sterile pledgets with sterile forceps.
 4. Prepare syringe.
 - a. Remove syringe and barrel from sterile jar with forceps.
 - b. Put barrel into syringe without touching barrel itself and without touching needle end of syringe. Check numbers. Inspect for a leak.
 - c. Place needle end on a sterile gauze pledget moistened with alcohol.
 5. Prepare the tablet.
 - a. Draw up about one cc. of water from spoon that needle was boiled in.

- b. Discard rest of water.
 - c. Discharge the cc. of water from syringe into spoon.
 - d. Place tablet of medium, without touching it, into water, let it stand briefly as it dissolves.
 - e. Then draw water into syringe again.
 - f. Shake syringe to insure good mixing of tablet with water.
 - g. Do not proceed with injection until tablet is dissolved. It will clog needle.
6. Final preparation before injection.
- a. Fit needle onto syringe.
 - b. Expel all air from syringe.
 - c. Hold syringe on a level so that piston will not fall back.
 - d. Keep needle covered with alcohol pledget.
7. The hypodermic injection.
- a. Choice of site for injection.
 - (1) Use outer arm. Inner arm can't be used because of blood vessels and nerves.
 - (2) Thoroughly clean with alcohol pledget the site to be used. Rub 30 seconds more or less.
 - (3) Hold syringe firmly between thumb and first two fingers of right hand.
 - (4) Take up a fold of cleaned flesh with thumb and first two fingers, holding it so that a firm, smooth surface is exposed.
 - b. The injection.
 - (1) Reassure the patient.
 - (2) Insert needle slightly on bias with a quick, firm pressure.

- (3) Don't touch piston while inserting needle.
- (4) Withdraw needle slightly, readjust the fingers.
- (5) Withdraw plunger a little - look for blood.
- (6) If no blood, inject solution.
 - a. Do not move needle.
 - b. Watch patient's face to be prepared to pull needle out if he moves his arm.
- (7) Withdraw needle quickly.
- (8) Hold alcohol sponge over site an instant, then massage gently to facilitate absorption.

8. Care of instruments after injection.

- a. Rinse needle and syringe with water, then alcohol.
- b. Wipe "hypo" wire to prevent a small rust spot clogging the bore or blunting the end of the needle.
- c. Return syringe, barrel, needle to their places.

9. Injections of insulin, sera.

- a. Method of removing medicines from rubbered stoppered bottles, glass vials, etc.

E. Hypodermoclysis.

1. Purpose.
2. Method and site of administration.

F. Charting.

1. Chart time, drug and dose, purpose and effect of medication.

IX. Intramuscular Injection.

A. Definition.

B. Purpose.

1. Drugs are injected into the muscles when the drug is not suitable for intravenous administration.

2. When a more immediate effect is desired than would be obtained by a subcutaneous injection.
3. When the drug is irritating to the tissues and not readily absorbed.

C. Usual Sites.

1. Gluteal, lumbar, or deltoid muscles.

D. Preparation of Equipment.

1. Boil, if equipment has not been sterilized by other method, as autoclave.

F. Procedure.

1. Preparation of skin of patient.
2. Insert intramuscular needle (#22 usually) straight into muscle tissue, then withdraw needle slightly.
3. Withdraw plunger slightly and if no blood appears, inject medication. If blood appears, withdraw needle and select new site.
4. Massage area for a few minutes to stimulate circulation.

NOTE: Intramuscular injections usually given by medical officer or graduate nurses.

G. After-Care of Equipment.

1. Clean needle in cold water immediately and replace stillette. Place in pan to be thoroughly cleaned and sterilized later.
2. Wash syringe in cold water, then in warm soapy water, sterilize for 10 minutes by boiling. Equipment may be autoclaved. The needle is placed in a clean test tube prior to being autoclaved.

H. Charting.

X. Intravenous Injection.

A. Definition.

B. Purpose.

1. When rapid effect of medicine is desired, or when it is inadvisable to give medicine by mouth.
2. For nourishment.
 - a. Sterile glucose solution (usually 5% to 10%) either in sterile distilled water or sterile normal saline solution,
3. For replacing fluids.
 - a. Shock.
 - b. Dehydration.

C. By Whom Given.

1. Always given by medical officer or under his direct supervision.

D. Preparation of Equipment.

1. Importance of sterility.

E. Procedure.

F. After-Care of Equipment.

G. Charting.

APPENDIX

ABBREVIATIONS AND SYMBOLS

Preparations of Drugs

Abbreviation	Meaning
Aq.	water
aq. dest.	distilled water
Comp.	compound
Conf.	confection
D	give
Dil.	dilute
Empl.	plaster
et	and
Fl	fluid
Inf.	infusion
Lin.	liniment
Liq.	liquid
Lot.	lotion
Mist.	mixture
N.N.R.	new and non-official remedy
Ol.	oil
Pil.	pill
Pulv.	a powder
S. fr.	whisky
Sp.	spirit
S.v.r.	alcohol
S.v.g.	brandy
Syr.	syrup
Tinct.	tincture
Troch.	lozenge
Ung.	ointment
Vin.	wine

Dosage and Application

Abbreviation	Meaning
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aa	of each
Add	add to

Abbreviation	Meaning
Add. part. dol.	to the painful part
ad. lib.	as much as desired
C.	gallon
C.	centigrade
c.	with
c.c.	cubic centimeter
Cap.	let him take
Contin.	let it be continued
Dim.	one-half
D. in p. aeq.	divide in equal parts
Div.	divide
Dur. dolor.	while the pain lasts
Ft.	let it or them be made
Gm.	gram, grams
gr.	grain, grains
gtt.	a drop, drops
Garg.	a gargle
Kg.	a thousand grams
L.	a liter
Lb., lb.	pound
M.	mix
min.	minim
mil.	a thousandth of a liter.
N.b.	note well
No.	number
O.	a pint
Part. vic.	in divided doses
Q.s.	as much as is sufficient
Rx	take
S.	without
S. or Sig.	give the following directions
S.o.s.	if necessary
Ss	one-half
tp.	teaspoonful
Tsp.	tablespoonful
Tbsp.	tablespoonful
<i>33</i>	dram
<i>30</i>	ounce
	a scruple

TIME OF ADMINISTRATION

Abbreviation

Meaning

A.c.	before meals
Alt. die.	alternate days
Alt. hor.	alternate hours
Alt. noct.	alternate nights
Am.	morning
B.i.d.	twice a day
H.	hour
H.d.	at bedtime
H.s.	at sleeping time
M. et N.	morning and night
O.d.	daily
O.n.	each morning
O. n.	each night
P. c.	after meal
P.r.n.	when required
Q.h.	every hour
Q. 2h., Q. 3h	every two, three, or
Q. 4h	four hours
Q.i.d., or 4 i.d.	four times a day
Stat.	at once
T.i.d	three times a day

HOURS OF ADMINISTRATION

4 i.d.	8 A.M., 12 N., 4 P.M., 8 P.M.
q. 2 h.	6, 8, 10, 12 etc.
q. 3 h	9, 12, 3, 6, etc.
q. 4h	8, 12, 4, etc.
q. 6 h.	6, 12, etc.
T.i.d.	10 A.M., 3 P.M., and 6 P.M.
O.d.	10 A.M.
O.m.	6 A.M.
O.n.	8 P.M.
A.c.	1/2-hour before meals— 6:30 A.M., 12:30 P.M., 4:30 P.M.
P.C.	8 A.M., 2 P.M., 6 P.M.
B.i.d.	10 A.M., 4 P.M.

AN OUTLINE IN NURSING FOR MEDICAL TECHNICIANS

LECTURE XVII and XVIII

NURSING IN COMMUNICABLE DISEASES

I. General Remarks.

- A. Communicable diseases are those which may be transmitted from one person to another. These diseases are caused by living organisms or germs which invade some part of the body. Communicable diseases include those which are often referred to as contagious, infectious, or epidemic diseases.

II. Definitions. - Certain words and terms as they apply to communicable diseases must be understood in order to care for and control these diseases. Some of the more common and important of these are listed below.

- A. Isolation. - The separation of an infected person from direct or indirect contact with others persons.
- B. Carrier. - One who harbors and transmits a disease without having the symptoms of the disease.
- C. Excreta. - Respiratory secretions, feces, urine, vomitus, and sweat.
- D. Discharges. - Includes excreta and any abnormal matter (pus, etc.) eliminated from the body.
- E. Contaminated. - Soiled by the infectious agent or by discharges containing the infectious agent.
- F. Disinfection. - The destruction or great weakening of the

infectious agent by physical or chemical means.

G. Concurrent disinfection. - The application of disinfection during the contagious period.

H. Terminal disinfection. - The application of disinfection at the end of the contagious period.

III. Classification - Communicable diseases may be classified according to the principal method of transmission.

A. Respiratory diseases.

1. The infectious agents are found in the discharges from the nose, throat, or lungs and are usually spread by coughing, sneezing, and spitting.
2. Transmission may result directly by contact or indirectly by contaminated food, eating utensils, drinking cups, fingers, etc.
3. Some examples of this group are the common cold, diphtheria, influenza, measles, mumps, pneumonia, pulmonary tuberculosis, and smallpox.

B. Intestinal diseases.

1. The infectious agent is eliminated from the body in the feces (also vomitus or urine in some cases) and is transmitted to others by means of contaminated water, milk, food, utensils, fingers, etc.
2. Generally speaking, the infectious agent must be swallowed for infection to occur.
3. Examples of this group include typhoid fever, amebiasis, bacillary dysentery, cholera, and common diarrhea.

C. Insect-borne diseases.

1. The infectious agent is transmitted from person to person or from animal to person by means of blood-sucking insects.
2. Malaria, dengue, typhus fever, yellow fever, and Rocky Mountain spotted fever are examples.

D. Venereal diseases.

1. The infection is practically always transmitted by direct contact during sexual intercourse.
2. Syphilis, gonorrhea, chancroid, lymphogranuloma inguinale, and granuloma inguinale are the venereal diseases.

E. Miscellaneous diseases. - This group includes -

1. Diseases which are not transmitted by the methods outlined above, for example, trichophytosis, known also as "dhobie itch" or "athlete's foot", which is usually transmitted by indirect contact.
2. Diseases which are not ordinarily transmitted from person to person, such as rabies, which is usually transmitted from animal to man by the bite of the animal, and tetanus, which is a disease caused by a wound infection.

IV. Importance of nursing. - It can readily be seen that careful and expert nursing and ward management are important for the following three reasons:

- A. Since most of these patients are acutely or even seriously

ill, they require more attention and nursing care than ordinary patients.

B. The nurse or attendant must know how to minimize the chances of becoming infected with the disease himself.

C. Marked care must be exercised to prevent the transmission of the disease to other patients or persons.

V. Isolation Technique. - By isolation technique is meant the method of applying and enforcing isolation.

A. Segregation may be accomplished by placing the patient in a -

1. Room alone.

2. Ward with similar cases.

3. Cubicle prepared by hanging sheets or curtains around the bed.

B. The patient must not leave his room, ward, or cubicle.

C. Visitors are not allowed.

D. In most cases wear a cap and gown while in the patient's room. In some cases it is advisable to wear a mask, and sometimes rubber gloves. None of these articles are worn outside the room or ward. Gowns should be folded with the contaminated side (the outside) out if they are left in the room, whereas they are turned inside out if they are left just outside the room.

E. After any contact with the patient attendants should wash their hands and faces well. In any case, before leaving the room or ward, the hands should first be washed in soap

and water (a pan of warm green or soft soap solution is ideal), then rinsed in water, and then immersed in a disinfecting solution, such as 70 percent ethyl or denatured alcohol, 3 percent cresol solution, or 1-2,000 solution of bichloride of mercury. The hands and face should always be washed again just before eating.

F. Avoid unnecessary close contact with the patient. Be particularly careful to avoid unnecessary contact with any discharge, and in handling any object contaminated by discharges.

G. The bed, room, and ward must be kept scrupulously clean. If the furniture, walls, or floor become contaminated by discharges they should be carefully washed with a disinfecting solution such as 3 percent cresol.

H. Disinfect dishes, utensils, food, and linen as follows:

1. Dishes must be sterilized before being returned to the kitchen. They should be boiled if facilities permit. In small hospitals they may be sterilized by soaking in 3 percent cresol solution for 30 minutes.

In some cases it is advisable to keep the patient's dishes separated from those of other patients.

2. Utensils may be handled in the same manner as the dishes.

3. Unused food is burned.

4. Bedding and linen are collected separately and must be sterilized before being added to the other linen.

Steam sterilization is preferable but, if this is not

possible, sterilization may be accomplished by boiling, or by soaking in 3 percent cresol solution for 30 minutes.

I. Disposal of excreta, dressings, and rags is accomplished as follows:

1. Sputum and other discharges from the respiratory tract should be collected in paper cups.
2. Soiled surgical dressings and cleaning rags are burned.
3. Feces and urine are best sterilized, when necessary, by adding at least twice the amount of 3 percent cresol solution and allowing them to stand for at least 1 hour.

J. It is advisable for each patient to have an individual thermometer. Thermometers should always be kept sterilized.

K. The patient's room should be well screened. Insects should be searched for and destroyed. This applies even to those diseases which are not classified under insect-borne diseases, since any insect may become contaminated and thus act as a purely mechanical carrier and contaminate other objects.

L. Efficient vaccines or other immunizing substances are available for the prevention of many of the communicable diseases. Potential or actual attendants of cases of cholera, typhoid fever, yellow fever, and smallpox are always vaccinated or revaccinated.

- M. Although venereal diseases are transmitted primarily by direct contact during sexual intercourse, it is occasionally possible for an "innocent infection" to occur. Separate latrines, or at least separate toilet bowls, should be reserved for venereal cases. Moreover, venereal cases should be further separated into groups of the same venereal disease. The hands of patients and attendants must be kept scrupulously clean, particularly after contact with venereal discharges. Gonorrhea may produce a very severe infection of the eyes, leading to blindness in some cases. Syphilis may be transmitted in certain stages by discharge from any ulcer or mucous membrane, including the mouth.
- N. Immediately after the patient is undressed his clothing and equipment should be disinfected. Steam sterilization is the most effective procedure for this, but it causes injury to woolen cloth, leather, and metal. Fortunately, in most of the communicable diseases, it is sufficient to thoroughly sun and air clothing and equipment. Before they are returned to the patient, woolens should be dry-cleaned, washable clothes laundered and, if advisable, certain items of clothing and equipment wiped with a disinfecting solution, such as 3 percent cresol. In each case, therefore, the method of disinfection will depend upon the orders of the medical officer.
- O. When the patient is no longer a source of infection the following procedures are carried out:

1. Bathe patient and give him clean clothing.
2. Disinfect dishes, utensils, linen, and articles which may have become contaminated.
3. Thoroughly clean room, bed, and furniture by washing with soap and water or a disinfecting solution as required. When possible, the room and bedding should be sunned and aired for 24 to 48 hours.

VI. Special Procedures and Precautions in Certain Diseases. - Isolation technique, as usually practiced in the nursing and treatment of patients with communicable diseases, has been given in detail in the above paragraphs. The isolation technique for many of the diseases discussed hereafter should be practiced exactly as given above, although there are some variations that should be mentioned and certain points must be stressed. For this reason "concurrent disinfection" and "terminal disinfection" will be mentioned separately, although they are necessarily important parts of isolation technique as a whole. For the sake of brevity and simplicity as well as to avoid needless repetition of detailed technique, an outline form will be followed where possible. The same policy will be adopted in the presentation of "nursing care", since the general phases of this subject have been covered in preceding sections.

A. Respiratory diseases.

1. Common respiratory diseases. - These include the common cold, pharyngitis, trench mouth, tonsillitis, and bronchitis.

a. Isolation technique. - Desirable. The cubicle system of isolation is usually employed.

(1) Concurrent disinfection. - Of respiratory discharges and articles contaminated by them.

(2) Terminal disinfection. - General cleaning and airing.

b. Nursing care. - General.

2. Influenza.

a. Isolation technique. - As for the common respiratory diseases.

(1) Concurrent disinfection. - Of respiratory discharges and all articles contaminated by them.

(2) Terminal disinfection. - General cleaning and airing.

b. Nursing care. - During the acute illness allow latrine privileges only. In some cases weakness is very severe, and convalescence may be prolonged.

3. Diphtheria.

a. Isolation technique. - Strict and mandatory until ordered discontinued by the medical officer.

(1) Concurrent disinfection. - Disinfection of all discharges and contaminated articles.

(2) Terminal disinfection. - Thorough cleaning and airing.

b. Nursing care. - Absolute bed rest is necessary for

at least 2 weeks because of the danger of involvement of the heart. Gargles and throat irrigations are usually employed. Fluids are given in abundance. Be alert for evidence of difficult or noisy respiration, as this may indicate that the infection is spreading into the larynx or trachea. Notify the medical officer at once if there is the slightest sign of respiratory distress.

4. Measles.

- a. Isolation technique. - As for the common respiratory diseases and until all abnormal discharges from the respiratory tract have ceased; a minimum of 5 days after the appearance of the rash.
 - (1) Concurrent disinfection. - Of respiratory discharges and articles contaminated by them.
 - (2) Terminal disinfection. - General cleaning and airing.
- b. Nursing care. - General. Darkening the room is not necessary unless the eyes are acutely inflamed, or unless patient complains of the light's hurting his eyes.

5. German measles.

- a. Isolation technique. - As for the common respiratory diseases and for 1 week after the onset of respiratory symptoms.
 - (1) Concurrent disinfection. - Of respiratory

discharges and articles contaminated by them.

(2) Terminal disinfection. - General cleaning and airing.

b. Nursing care. - General.

6. Meningococcic meningitis (epidemic meningitis, cerebrospinal fever).

a. Isolation technique. - Rigidly applied until ordered discontinued by the medical officer. Caps and masks are worn.

(1) Concurrent disinfection. - Vigorous disinfection of respiratory discharges and contaminations.

(2) Terminal disinfection. - Thorough cleaning and airing.

b. Nursing care. - Maintain absolute bed rest and quiet. Many cases are restless and delirious and constant attendance is necessary. Apply bed rails if they are available. Bed rails may be improvised.

7. Mumps (epidemic parotitis).

a. Isolation technique. - As for common respiratory diseases and until the inflammation of the salivary glands subsides.

(1) Concurrent disinfection, - Of respiratory discharges and contaminations.

(2) Terminal disinfection. - General cleaning and airing.

b. Nursing care.

- (1) Mouth wash (such as normal saline, Dobell's solution, or liquor antisepticus) every 3 hours.
- (2) Liquid or soft bland diet.
- (3) Orchitis (inflammation of the testicles) is thought to be minimized by absolute bed rest and by avoiding even slight blows or rough handling of the testicles. If orchitis develops, support the testicles on a soft pad placed on adhesive tape fastened high across the thighs. Cold compresses or ice bags may be used.

8. Pneumonia, acute, lobar. - Certain cases of primary broncho-pneumonia are quite similar to acute lobar pneumonia, while others are secondary to many other diseases.

a. Isolation technique. - As for common respiratory diseases. Single rooms are preferred.

- (1) Concurrent disinfection. - Of respiratory discharges and articles contaminated by them.
- (2) Terminal disinfection. - Thorough cleaning and airing.

b. Nursing care.

- (1) Absolute bed rest is mandatory.
- (2) Do not let the patient talk, feed himself, or

brush his own teeth.

- (3) Do not let patient sit up or turn in bed unassisted.
- (4) Gently wipe the secretions and discharges from his nose and mouth with a paper or gauze handkerchief. Do not let patient sit up or lean over to spit or cough.
- (5) Do not let him out of bed for any reason until the medical officer permits it.

9. Scarlet fever.

a. Isolation technique. - Employed until all abnormal discharges have ceased and, in any case, for a minimum of 3 weeks.

- (1) Concurrent disinfection. - Of all discharges and articles contaminated by them.
- (2) Terminal disinfection. - Thorough cleaning and airing.

b. Nursing care. - Absolute bed rest is required. Give gargles or throat irrigations every 3 hours. Because of the fairly frequent complication of acute nephritis, the amount and appearance of the urine should be carefully observed and recorded.

10. Pulmonary tuberculosis.

a. Isolation technique. - Required even though certain cases may appear healthy and may have latrine privileges. A perfectly well feeling and appearing

patient may disseminate countless numbers of tubercle bacilli every time he coughs, spits, or sneezes. He should be taught to use paper handkerchiefs every time he coughs or sneezes, to use his sputum cup and to keep it covered, and not to stand near anyone while talking.

(1) Concurrent disinfection. - Of all respiratory discharges, particularly the sputum, and of all contaminated articles. Collect handkerchiefs and paper sputum cups in paper bags and burn them promptly. Disinfection of eating utensils is very important. Individual dishes are preferable.

(2) Terminal disinfection. - Thorough cleaning and airing. Sun the room and furniture if possible.

b. Nursing care. - Always be on the alert for possible hemorrhage from the lungs. Even blood streaking of the sputum calls for placing an ambulatory patient in bed until the medical officer has seen him. In frank hemorrhage.—

(1) Put the patient to bed and keep him there.

(2) Place an ice bag on his chest.

(3) Keep him still; reassure him; maintain quiet.

(4) Notify the medical officer at once.

(5) Keep all of the blood and sputum for measure-

ment and inspection.

11. Smallpox. - Smallpox is characteristically transmitted by intimate contact with the patient but, since the infectious agent is found in all discharges, it may be transmitted by indirect contact and is frequently classified as a respiratory disease.

a. Isolation technique. - Very strict and rigid until all crusts and scabs have disappeared. Caps are always worn.

(1) Concurrent disinfection. - Vigorous and prompt disinfection of all discharges and contaminated articles.

(2) Terminal disinfection. - Thorough cleaning, washing with a disinfecting solution, and airing for 48 hours.

b. Nursing care.

(1) Apply olive oil or mineral oil to skin.

(2) Wash the eyes frequently with boric acid solution.

(3) Bandage the hands or apply cotton gloves.

(4) Force fluids.

(5) Cleanse the mouth frequently and gently.

12. Chickenpox. - Chickenpox, like smallpox, is transmitted directly by contact with the patient, and indirectly by all discharges and contaminated articles. Chickenpox may be confused with smallpox, but they are entirely

different diseases, and chickenpox is usually a much less serious disease.

a. Isolation technique. - Applied for 10 days after the appearance of the rash.

(1) Concurrent disinfection. - Of all discharges and contaminated articles.

(2) Terminal disinfection. - Thorough cleaning and airing.

b. Nursing care. - Only general care for mild cases; as for smallpox for severe ones.

B. Intestinal diseases. - In these diseases the infectious agent is eliminated primarily in the feces, but is also found in the vomitus and, in some diseases, in the urine. It should also be stressed that, for infection to occur, the infectious agent must usually be swallowed after being carried to the mouth by contaminated food, water, milk, fingers, dishes, or other objects.

1. Cholera (Asiatic cholera).

a. Isolation technique. - Rigidly enforced. Attendants must exercise strict personal precautions. Keep hands clean. Except for necessary food and drink, do not put anything in the mouth. Stay out of the kitchen.

(1) Concurrent disinfection. - Vigorous and prompt disinfection of feces, vomitus, and all articles contaminated by them. Burn uneaten food.

Linen is particularly liable to become grossly contaminated as vomiting may be frequent and diarrhea nearly continuous. Soiled linen is promptly sterilized by boiling or soaking in disinfectants.

(2) Terminal disinfection. - Thorough cleaning, washing with a disinfecting solution, and airing for 48 hours.

b. Nursing care. - Maintain intake of large quantities of fluids. Intravenous and subcutaneous salt solutions are required but, if it can be retained, a mixture of three parts of normal saline to two parts of water is very helpful by mouth.

2. Amebic dysentery - amebiasis. - The term amebiasis is being employed more and more in this condition, since many patients do not have and have not had "dysentery"-an aggravated form of diarrhea.

a. Isolation technique. - Always applied in acute cases. Applied in the cases of carriers and chronic cases until they have been instructed as to the nature of the disease and how to avoid transmitting it to others. They must be taught how to disinfect feces if sanitary sewage disposal is not available to them. They must wash their hands thoroughly immediately after using the toilet. They must not act as food handlers.

- (1) Concurrent disinfection. - Of feces and vomitus and objects contaminated by them.
 - (2) Terminal disinfection. - Thorough cleaning.
 - b. Nursing care. - Chart the number and character of stools. Save one or more stools for daily inspection by the medical officer.
3. Bacillary dysentery.
- a. Isolation technique. - As for cholera and until ordered discontinued by the medical officer.
 - (1) Concurrent disinfection. - Feces and vomitus and objects contaminated by them.
 - (2) Terminal disinfection. - Thorough cleaning and airing.
 - b. Nursing care. - Same as for amebiasis.
4. Typhoid fever.
- a. Isolation technique. - Rigidly applied until ordered discontinued by the medical officer. In typhoid fever the typhoid bacilli (the germs which cause the disease) are also found in the urine.
 - (1) Concurrent disinfection. - Of all feces, vomitus, and urine and of all objects contaminated by them.
 - (2) Terminal disinfection. - Thorough cleaning and airing.
 - b. Nursing care. - Excellent general nursing care is required since the typical case has fever and is

very sick for at least 3 weeks. Some are delirious and require constant attendance and bed rails if available. Absolute rest and quiet are indicated. The diet is soft, with no roughage, but the caloric value is high. Adequate fluids are given. No cathartics are given. Change the position of the patient frequently, using pillows for support. Give special attention to bathing and care of the skin to prevent bedsores.

C. Insect-borne diseases.

1. Malaria.

a. Isolation technique. - Consists only of protecting the patient from the bites of mosquitoes, either by placing him in an adequately screened room or by the use of mosquito netting. The Anopheles mosquito transmits malaria.

(1) Concurrent disinfection. - None. Destroy all mosquitoes in the sick room.

(2) Terminal disinfection. - None. Make a final careful search for mosquitoes.

b. Nursing care.

(1) Chart the temperature and record the chills.

(2) Apply blankets and external heat by hot-water bottles or heating pads during the chill.

(3) There is profuse sweating and headache after the chill. Change pajamas and bed linen as

they become wet. Apply an ice cap to the head. Force fluids.

2. Dengue.

a. Isolation technique. - Protection from the bites of mosquitoes for 5 days after the onset of symptoms. Dengue is transmitted by the *Aedes aegypti* mosquito.

(1) Concurrent disinfection. - None. Destroy all mosquitoes in the sick room.

(2) Terminal disinfection. - None. Make a final search for mosquitoes.

b. Nursing care. - General.

3. Typhus fever. - There are two forms of typhus fever, the more dreaded epidemic typhus, transmitted by body lice (cooties), and endemic typhus, transmitted by rat fleas. There is also some question as to whether other species of blood-sucking insects may transmit typhus fever in some cases.

a. Isolation technique. - Keep the patient in an insect-free room.

(1) Concurrent disinfection. - None. However, destroy all insects on the patient and in his environment.

(a) Destroy the vermin in his clothes and bedclothes by steam sterilization or by boiling.

(b) "Delouse" him--rid him of all insects and their eggs. Place him in a bathtub or, if he is too sick or a tub is not available, on a bed protected by a bed-sheet over a rubber sheet. Then wash him thoroughly, applying soapsuds literally from head to foot. The most effective measure is then to shave the hair from his body. If universal shaving is not desired by the medical officer, apply vinegar thoroughly to loosen the eggs, and then wash with a solution of three parts of warm soapy water to one part of kerosene. Make a careful search for adult lice or eggs which may have escaped. The eggs (nits) may be attached to the hairs, and can be removed with a fine-toothed comb. (Characteristically, however, the eggs and adults of the body lice are found in the seams of the clothing.)

(c) The attendant should use, a "louse repellent" such as four parts of naphthalene to one part of soft soap, on his clothing, cap, and gown; wear rubber gloves which extend over the lower ends.

of the sleeves of the gown; and wear "boots", preferably made of an impervious material such as oiled silk.

(d) Use an insect spray on the bed, furniture and room.

(2) Terminal disinfection. -- None. Make final careful search for insects.

b. Nursing care. - General.

4. Yellow fever. The *Aedes aegypti* mosquito is the main insect concerned in the transmission of yellow fever, though recent evidence indicates that some other insect may transmit it in certain cases.

a. Isolation technique. - Keep the patient in an insect-free room. Protect him primarily from the bites of the *Aedes aegypti* mosquito. Since this mosquito stays in and around human habitation by choice, it is safer to have each bed covered by mosquito netting, even though the bed is in a well screened room or ward. It is also well to know that the *Aedes aegypti* characteristically bites during the daytime. The patient cannot infect the mosquito after the first 4 days of the fever.

(1) Concurrent disinfection. - None. Destroy all insects in the sickroom.

(2) Terminal disinfection. None. Make a final careful search for insects.

b. Nursing care. - General. Observe and record the number and character of stools, and amount and character of the vomitus and urine.

D. Venereal Diseases.

1. Types of Venereal diseases.

- a. Syphilis
- b. Gonorrhea
- c. Chancroid
- d. Lymphogranuloma inguinale
- e. Granuloma inguinale

(1) Concurrent disinfection. - Discharges, discharging lesions and objects contaminated by them.

(2) Terminal disinfection. - Important in some cases.

Note: These diseases are discussed in more detail in Course on Hygiene and Sanitation.

E. Miscellaneous Diseases.

1. Tetanus (lockjaw).

a. Strictly speaking, tetanus is not a communicable disease. It is an acute infectious disease caused by the toxin of the tetanus bacillus which has infected a wound. Puncture wounds, contused and lacerated wounds, and gunshot or high-explosive

wounds are especially prone to be infected by the germs of tetanus. Tetanus can be prevented by the administration of tetanus toxoid before the incurrence of a wound or by the administration of tetanus antitoxin (ATS) after a wound is incurred.

(1) Isolation technique. - Not required, though "isolation" is necessary to insure absolute quiet.

(a) Concurrent disinfection. - None. However, soiled dressings from any remaining wound should be promptly disposed of by burning.

(b) Terminal disinfection. - None.

(2) Nursing care. -

(a) Maintain absolute quiet and be extremely gentle. Even very slight noises or the slightest jarring of the bed may cause a convulsion.

(b) Intravenous, subcutaneous, or rectal fluids and rectal or nasal feedings are required.

(c) Intravenous, hypodermic, or rectal sedatives are required to keep the patient comfortable and to prevent and control convulsions.

AN OUTLINE IN NURSING FOR MEDICAL TECHNICIANS

LECTURE XIX

Some Commonly Used Drugs - Treatment of Poisons

I. Some Commonly Used Drugs

A. General Remarks -

1. The list of drugs contained in this lecture includes some of the commonly used ones, many, if not all of which, the student may have an opportunity to see used during his work on the ward.
2. Any dosages given are those of the average young adult.
3. Drugs are to be given by order of a Medical Officer.
4. For remarks concerning the care and administration of drugs, see outline in Ward Management, Supply and Hospital Administration, and other remarks in this outline.

B. Drugs and their general uses

1. Drugs used for the relief of pain -

a. Acetylsalicylic Acid, U.S.P. (Aspirin)

(1) Uses

(a) Analgesic - to relieve pain

(b) For relief of headache and Coryza

(c) Anti-rheumatic (in treatment of rheumatism)

(d) Anti-pyretic (to reduce fever)

(2) Dangers

- (a) This drug should not be used indiscriminately, as it can cause serious effects on susceptible individuals, as for example, asthmatics.

- (3) Dosage: 0.6 Gms (10 grains) repeated once in 3 hours unless toxic effects develop, as ringing in the ears, etc. (Dosage different in rheumatic fever)

b. A P C Capsules (Contains aspirin, phenacetin and caffeine)

(1) Uses

- (a) Used for headache and general aches in acute Coryza (cold) and influenza

- (b) Also has a temperature-reducing effect.

(2) Dangers

- (a) May also cause serious effects, as aspirin, in susceptible individuals.

- (3) Dosage: Varies, depending upon size of capsule.

At L.G.H. capsule contains aspirin 0.325 gms.

(5 grains); phenacetin 0.130 gms (2 grains); and caffeine 0.065 gms. (1 grain). Dosage for this mixture would then be 1 to 2 capsules, as directed by the Medical Officer.

c. Morphine Sulfate (U.S.P.)

(1) General Remarks

- (a) Morphine is a derivative of opium

- (b) It is usually given by hypodermic injection.

(2) Uses

- (a) This drug is an excellent drug for the control of pain, but cannot be given ordinarily but for short periods of time (except in certain incurable conditions, as certain types of cancer and other malignant tumors for which no hope of cure can be given patient) as it is very habit-forming.
- (b) Given often for certain types of severe heart pain.
- (c) Given often before surgery to quiet patient, relieve apprehension, alleviate pain and help prevent shock.
- (d) Also given often following surgery for same reasons.
- (e) Used in shock or to prevent shock.

(3) Dangers

- (a) Morphine is very habit-forming and this condition is most difficult to relieve.
Greatest discrimination in its use is necessary.
- (b) Some persons react peculiarly to morphine.
 - ((1)) Show cerebral excitation, followed by nausea and even vomiting.
- (c) Overdoses lead to intoxication, which may result fatally.

(d) Symptoms of overdosage

((1)) Begins with usual depression, which

deepens into sleep.

((2)) Pupils become extremely constricted.

((3)) Respiration becomes slow.

((4)) Sleep deepens into coma, from which

patient can be aroused with difficul-

ty at first; later he cannot be

aroused at all.

((5)) Death results from failure of res-

piration.

(4) Dosage: 0.008 Gm. to 0.016 Gm. (1/8 grain to
1/4 grain)

d. Codeine, U.S.P.

(1) General Remarks:

(a) Codeine is a derivative of opium.

(b) Given by mouth and hypodermically.

(2) Uses:

(a) Less actively analgesic, hypnotic and
sedative than morphine.

(b) Preferable to morphine when average doses
of codeine are effective, because it is
very much less likely to produce habit,
and is less constipating.

(c) Used for control of certain coughs (partic-
ularly dry cough, as in pneumonia). It is
sometimes added to cough medicine in small
dosage.

(d) Small doses sometimes added to A P C capsule

(3) Dangers

(a) Habit-forming, though less so than morphine.

(4) Dosage: 0.032 Gm. (1/2 grain) - sometimes
0.065 Gm. (1 grain) as for relief of cardiac
pain.

2. Drugs used for Cough

a. Brown Mixture (Compound mixture of opium and
Glycyrrhiza) U.S.P.

(1) Uses

(a) Commonly used cough medicine

(2) Dosage: 4 cc. every 3 hours

b. Elixir Terpin Hydrate

(1) Uses

(a) Commonly used cough medicine, often used
in bronchitis accompanied by free secretion -
(sometimes has small amount of codeine added)

(2) Dosage: 4 cc. every 3 hours

c. Ammonium Chloride, U.S.P.

(1) Uses

(a) Commonly used expectorant

(2) Dosage

(a) 0.325 to 1 Gm. (5 to 15 grains) repeated
about every 2 hours.

(b) Sometimes it is given in a cough syrup
form, as with Brown Mixture (Dosage, 4 cc.
every 3 to 4 hours)

d. Codeine

(1) See previous remarks on codeine.

3. Drugs used for rest (Sedatives)

a. Phenobarbital, U.S.P. (Luminal)

(1) Uses:

(a) Commonly used sedative

(b) Also used frequently as antispasmodic
in gastro-intestinal conditions

(c) Epilepsy

(2) Dangers

(a) Should not be continued over too long a
period and large doses kill by respiratory
paralysis

(3) Dosage

(a) Varies - usually 0.016 to 0.032 Gm. (1/4
to 1/2 grain) and may be given 2 or 3 times
a day. Used in larger doses at times in
epileptics.

b. Other drugs used with similar action to Phenobarbital.

(1) Sodium Amytal

(2) Seconal

c. Paraldehyde, U.S.P.

(1) Uses

(a) Hypnotic and anti-spasmodic

(b) Produces sleep which closely resembles
natural sleep.

(c) Used often to quiet mental patients.

(2) Dosage: 2 cc. (30 minims), sometimes larger

doses are employed, as in delirium tremens

(a) Preferably given with cracked ice or ice-water, if given by mouth

(b) May be given by rectum.

4. Drugs used for constipation

a. General remarks

(1) As in the case of all drugs, these drugs should only be given on order of a Medical Officer.

(2) Remember, all cases of abdominal pain should be looked upon as appendicitis or other surgical abdominal condition until proven otherwise.

b. Drugs

(1) Mineral Oil (Liquid Petrolatum, U.S.P.)

(a) Uses

((1)) Largely used for its mechanical action, to keep the stools soft in the treatment of constipation.

((2)) Not absorbed by the intestine and has no nutritive properties.

(b) Dosage: 15 cc. (4 fluidrachms) - Best given at bedtime, or in the morning before eating, and, if necessary, one or two hours before lunch and before dinner.

(2) Aromatic Fluid Extract of Cascara Sagrada, U.S.P.

(Form of Cascara Sagrada)

(a) Uses

((1)) Used often alone as a cathartic. At times used in combination with Mineral Oil.

(b) Dosage: Varies - 2 to 4 cc.

(3) Castor Oil - U.S.P. (Oleum Ricini)

(a) Uses

((1)) An active cathartic

((2)) Irritates the small and large intestine.

(b) Dosage: 15 cc. (4 fluidrachms)

(4) Magnesium Sulfate U.S.P. (Epsom Salts)

(a) Uses

((1)) An active cathartic

(Note: Magnesium Sulfate is also used externally in form of wet dressings. A crude form should not be used for internal administration)

(b) Dosage: Varies - Sometimes given in liquid form as saturated solution; 15 cc., or as directed by the Medical Officer.

5. Gargles

a. Antiseptic Solution (N.F.)

b. Alkaline Aromatic Solution

c. Dobell's Solution (Compound Solution of Sodium Borate)

(1) Often given diluted equal parts with water.

6. Heart Medicines

a. General Remarks

(1) Some of the drugs already described as

medicines to relieve pain (morphine and codeine)

and medicines for rest which include, in ad-

dition to morphine and codeine, such drugs as

Phenobarbital, Sodium Amytal and Paraldehyde,

are used in certain heart conditions.

(2) There are many other drugs used, some of which

are used only infrequently. However, one drug,

namely Digitalis, is used quite often and there-

fore will be described in more detail.

b. Digitalis, U.S.P.

(1) Uses

(a) Given often to patients with a certain type

of heart irregularity (auricular fibrilla-

tion) and for certain cases of heart fail-

ure, particularly those cases with edema

(dropsy)

(b) Given in different forms, as in pill form

and in liquid form.

(c) Patient who is given Digitalis should be

kept under close observation for toxic

effects.

(2) Symptoms of Digitalis poisoning

(a) Nausea

(b) Vomiting

(c) Abdominal pain and diarrhea

(d) Visual disturbances

(e) Aggravation of symptoms of heart failure
and certain pulse changes

(3) Dosage

(a) Requires careful calculation by Medical
Officer.

7. Anemic Drugs

a. Iron Compounds

(1) Pills of Ferrous Carbonate U.S.P. (Blaud's
Pills)

(a) Uses

((1)) Useful in certain type of anemia;
i.e., Secondary Anemia

(b) Dosage

((1)) Varies

b. Liver preparations

(1) Liver extracts

(a) Useful in certain anemias; i.e., Primary
type

(b) Various types of preparations with various
dosages which should be given on label,
but will be specifically given according
to Medical Officer's directions.

8. Certain drugs commonly given on Gastro-Intestinal
Ward

a. Drugs for spasm of stomach and intestines

(1) Atropine U.S.P.

(a) Given at times in pill form, as Atropine Sulfate, and sometimes given by hypodermic injection (using hypodermic tablet)

(b) Also given in form of Tincture of Belladonna

(c) Poisoning

((1)) Slight toxic symptoms

((a)) Dryness of throat

((b)) Some dimness of vision

((2)) Serious poisoning

((a)) Rapid pulse

((b)) Flushing of skin

((c)) Talkative delirium

((d)) Marked dilatation of pupils

((e)) Elevation of temperature

((f)) Dryness of throat and skin

(d) Dosage

((1)) Atropine Sulfate, U.S.P.

((a)) 0.5 Mg. (1/120 grain)

((2)) Tincture of Belladonna, U.S.P.

((a)) 0.6 cc. (10 minims): At times larger doses are given.

((3)) Average doses may be toxic for some individuals.

b. Diluted Hydrochloric Acid, U.S.P. (a solution containing about 10% of hydrogen chloride)

(1) Uses

(a) Hydrochloric acid is the acid normally present in the gastric juice and is important in digestion. For those individuals lacking this acid, the above dilute solution is given.

(2) Dosage: 2 cc. (30 minims) of the diluted acid in about half a glass of water. It should be given after meals, through a glass tube. The dose should be repeated at the end of an hour; (larger doses are used in pernicious anemia, being given with meals).

c. Drugs for excess stomach acidity.

(1) Sippy powders

(2) Colloidal Aluminum Hydroxide preparations

(a) "Amphojel"

(b) "Creamalin"

d. For excess stomach gas

(1) Sodium Bicarbonate

(a) Dosage: 0.325 Gm. to 1 Gm. (5 to 15 grains)

(2) Rhubarb and soda

(a) Dosage: 4 cc. 3 to 4 times a day

9. Stimulants

a. Heart Stimulant

(1) Epinephrine Hydrochloride U.S.P. (Adrenalin)

(a) Dosage: Varies - Given by subcutaneous injection - 0.5 cc. (8 minims), 1 to 1000 solution (the average usual dosage)

b. Respiratory stimulant

(1) Caffeine

(a) Given by mouth, rectum, or by injection

(b) Dosage

((1)) Mouth: 0.15 Gms ($2\frac{1}{2}$ grains)

((2)) Injection: (Caffeine with Sodium
Benzoate) 0.5 Gms - ($7\frac{1}{2}$ grains)

10. Antiseptics and Disinfectants

a. See notes on outline in Surgical Nursing

II. Treatment of Poisons

A. General

1. Poisons when diluted are not absorbed as rapidly as when they are in concentrated form.
2. Call Medical Officer immediately.
3. Institute emergency treatment.

B. Procedure

1. Clean out the stomach by causing vomiting, or washing.
 - a. Continue the washing until the returned fluid is clear.
 - b. The following solutions are useful in producing vomiting:
 - (1) Soap sude
 - (2) Salt water
 - (3) Soda water
 - (4) Lukewarm water
 - (5) Milk - especially for corrosive poisons

c. Give 4 to 7 glassfuls, preferably lukewarm

d. Tickling throat with finger, after drinking of the fluid, will usually induce vomiting.

2. Large dose of Epsom Salts may safely be given after the stomach is cleaned out.

C. Treatment for specific poisons

(Note: A chart showing treatment of various poisons should be in Treatment Room of every hospital and readily accessible, so that prompt measures can be taken in treatment of poison cases.

1. Some examples:

a. Carbolic Acid (Phenol) poisoning.

(1) Give soap suds with Epsom Salts.

b. Corrosive poisons such as bichloride of mercury.

(1) Give milk or whites of eggs

c. Poisoning from sleep-inducing drugs

(1) Patient must be kept awake by physical

exercise; strong coffee may also be used.

d. Strychnine poisoning

(1) Do not give stimulants

(2) Keep patient as quiet as possible

(3) Wash stomach with weak potassium permanganate solution.

D. Most cases of poisoning show signs of shock.

(1) Heat is beneficial and artificial respiration may become necessary.

E. See First Aid Book for further remarks concerning treatment of poisoning.

AN OUTLINE IN NURSING FOR MEDICAL TECHNICIANS

LECTURE XX

Remarks Concerning the Nursing Care in Certain Diseases

I. Some Respiratory Diseases

A. General Remarks

1. Great majority caused by infection of respiratory tract by germs (bacteria) that gain entrance through air we breathe or food or other substances introduced into the mouth (See Hygiene & Sanitation book)
2. Sometimes germs lodge and remain in upper respiratory tract; i.e., nose, throat, sinuses or larynx.
 - a. Upper respiratory infections
3. Sometimes germs pass to lower part of respiratory tract, i.e., bronchi, lungs.
 - a. Lower respiratory infections.

B. Upper Respiratory Infections

1. Coryza (Acute cold in the head (Acute Nasopharyngitis))
 - a. Important because may be beginning of much more serious respiratory infections, as Otitis Media (Middle Ear Disease) and Pneumonia.
 - b. Importance of nursing care
 - (1) General measures of rest and building up resistance to prevent complications.
 - (a) Bed rest strictly enforced if fever present.

(2) Isolation measures

- (a) Don't allow patient in room of other sick or convalescent patients.

C. Lower Respiratory Infections

1. Pneumonia

a. General Remarks

- (1) Pneumonia outranks all other infectious diseases as a cause of death.

- 2. Most prevalent in winter months, when other infections of the respiratory tract are most prevalent.

- 3. Considered a contagious disease.

4. Importance of early diagnosis

- a. Newer types of medications are highly effective in many cases of pneumonia.

- (1) Serum treatment

- (2) Chemotherapy

- (a) Sulfonamide group of drugs; i.e., Sulfapyridine.

5. Nursing Care

a. Importance

b. Conserve the patient's strength

- (1) Absolute bed rest

- (a) Watch carefully that delirious patient does not get out of bed. Side-rails may be needed in special cases.

- (2) Private attendant may be very necessary.

- (a) Have patient fed by attendant.

- (b) Carrying out promptly and efficiently all orders of Medical Officer.
- (3) Careful attention to details and avoidance of unnecessary disturbance.
- (4) See that patient gets sufficient sleep.
 - (a) Patient should not be awakened for minor details of treatment.
- (5) Room should be well ventilated and preferably cool, but not cold. Patient should be kept well covered.
- (6) Importance of oxygen therapy in certain cases.
 - (a) Advisable when there is marked dyspnea, cyanosis, etc.
 - (b) Nurse should be alert for any change in symptoms and notify Medical Officer.
 - (c) Oxygen tent or other equipment for administering oxygen should be available and ready for use.
- (7) Most patients with pneumoplia are more comfortable if the head and shoulders are elevated.
- (8) Fluid
 - (a) Patient must take plenty of fluids; at least 3000 cc. daily unless otherwise ordered by Medical Officer.
- (9) Diet
 - (a) Nutritious

- (b) Easily digestible
- (c) Plenty of fruit juices
- (d) Frequent small feedings

6. Specific treatment

- a. See remarks above.

7. Isolation technique.

- a. Remember, pneumonia is a contagious disease.

8. Convalescence

- a. Should not be hastened.

- (1) Danger of complications.

D. Other Respiratory Diseases

- 1. See remarks on lectures on communicable diseases and consult book on Hygiene and Sanitation.

II. Some Circulatory Diseases

A. General Remarks

- 1. Diseases of circulatory system are the most frequent causes of death.
- 2. Proper functioning of every organ of body depends upon the ability of the heart and blood vessels to maintain an efficient circulation.

B. Some types of heart disease that may be seen in Army

- 1. Diseases characteristically found in young soldier:

- a. Congenital heart disease

- (1) Most individuals die very early, though some live beyond infancy.

b. Acute Rheumatic Fever

- (1) Most common in settled, temperate zone;
i.e., New England section of United States.
- (2) Often damaged heart valves (valvular heart disease)
 - (a) Tends to cause cardiac decompensation
(heart failure)

c. Functional Heart Disease

- (1) Symptoms suggesting disease of circulatory system, but after careful examinations no organic disease can be found.

2. Diseases characteristically found in older soldiers:

a. Arteriosclerosis (disease of the arteries, but has marked secondary effects upon the heart) -
(Popularly known as "hardening of the arteries")

- (1) Heart has to work harder to carry on circulation
- (2) Arteries which supply heart may become so involved that the muscle cannot get sufficient blood - causes degeneration of heart muscle.
- (3) Sometimes a thrombus or blood clot forms in an artery to the heart (Coronary occlusion - Coronary heart disease).

(a) May result in immediate death, or if patient lives, may markedly interfere with the ability of the heart to do its work.

- (1) See later remarks concerning nursing care of condition.

(4) Arteriosclerosis may be more pronounced in one part of body than another.

(a) May occur chiefly in cerebral vessels, causing so-called "softening of the brain".

(b) May occur in kidney vessels and interfere with their function.

b. Arterial hypertension ("high blood pressure")

(1) Sometimes occurs in young individuals

(2) Patient may die from hemiplegia ("stroke")

(3) Patient may get congestive heart disease.
("heart failure")

(Note: Some types discussed above, as high blood pressure, are seen in young as well as old)

c. Heart Failure

1. Heart, like other organs of the body, possesses a remarkable degree of reserve force, but when the demands are too great and the heart fails to supply an efficient circulation, the body is unable to function normally and symptoms of distress appear.
2. Most patients recover from acute heart attack, but there remains damage to the heart valves and the heart muscle; the latter may be due to damage to blood supply to the muscles and this damage is permanent and tends to produce heart failure.
3. Bulk of organic heart disease found in patients in whom the acute attack has subsided, leaving a more or less damaged heart behind it.

4. Symptoms of Heart Disease

- a. Some patients with damaged heart valves have no symptoms at all.
 - (1) Slight damage to valves and practically no damage to heart muscle.
- b. Vast majority whose hearts have been damaged by disease develop heart failure (cardiac decompensation) sooner or later.
- c. Most important symptoms
 - (1) Dyspnea or breathlessness
 - (a) First occurs on exertion
 - (2) Rapid or irregular beating of the heart
 - (3) Sense of pressure in region of heart
 - (4) Swelling of ankles
 - (5) Cyanosis (blueness)
- d. Above symptoms characteristically follow effort and, early in course of heart failure, they disappear or diminish during rest.
 - (1) This helps to distinguish heart failure from other conditions that have the same symptoms.
 - (2) Also furnishes clue as to how severe heart disease is and is a most important guide in treatment.

5. Nursing Care

- a. Importance of rest
- b. Improve mental outlook of patient
 - (1) Make restrictions imposed by the sickness as bearable as possible for patient.

- (2) Rest is not obtained merely by lying quietly, as discomfort, worry and irritation may do much harm.
- c. Many patients are comfortable only if their heads are elevated.
 - (1) Make patient as comfortable as possible in sitting position.
- d. Sleep very important - nurse should use every effort to see that they obtain it.
- e. Diet
 - (1) Follow Medical Officer's directions.
 - (2) Diet usually simple and easy to digestion.
 - (3) Often fluids and nourishment are restricted.
 - (a) Nurse may have to record intake and output.
 - ((1)) Importance of measuring accurately and importance of proper charting.
 - (4) Very often patient must be fed by nurse.
- f. Sedatives and pain-relieving medicines ordered by Medical Officer.
 - (1) Note action and how promptly and efficiently it produces the desired effect.
- g. Digitalis may be ordered by Medical Officer.
 - (1) Different individuals react differently to it.
 - (a) Importance of watching for toxic symptoms.
 - ((1)) See lecture on some commonly used drugs (Lecture XIX)
- h. Oxygen therapy necessary in certain cases.

i. Other important considerations.

(1) Be careful not to chill patient, as when giving a bath.

(a) For first few days in certain cases, may not be desirable to bathe patient.

((1)) Consult Medical Officer regarding this.

(2) Have signal cord within instant reach and answer lights immediately.

(3) Care in placing on bed pan

(a) Severely ill patients as those with coronary disease - turn patient on right side, place pan under buttocks and gently turn him back.

(b) Severely ill patient might die from such a simple procedure as using bed pan.

(4) Do not talk too much or bring up any discussion likely to be upsetting to patient. Avoid discussing patient's illness with him. Leave that to the Medical Officer.

III. Some Diseases of the Gastro-Intestinal Tract

A. Gastro-Intestinal conditions commonly seen:

1. Acute Gastritis, acute Enteritis, acute Gastro-Enteritis

a. These conditions are rather common, both in civilian and Army life.

b. The condition receives its name depending upon location of disease.

(1) In acute gastritis, symptoms and signs are those of gastric irritation; in acute enteritis, they are those of intestinal irritation; in acute gastro-enteritis, they are those of both gastric and intestinal irritation.

c. Any one or more of following symptoms may be present:

(1) Abdominal pain

(a) Often colicky in type

(2) Nausea

(3) Vomiting

(4) Diarrhea

(5) Fever

(6) Chills

(7) Prostration - at times severe

d. Cause

(1) Often acute food poisoning

(a) May occur in epidemics

(b) Undoubtedly many organisms in food can produce irritation.

((1)) See book on Hygiene and Sanitation.

(2) Acute alcoholic gastritis

(3) Other causes

e. Course

(1) Most cases of food poisoning (infection) clear up within few days with proper treatment.

(2) Some cases are extremely sick and many die.

f. These diseases may be confused with appendicitis

g. Many represent onset of some other acute infectious disease, as influenza.

h. Nursing Care

(1) Importance

(a) Certain cases extremely ill and require close observation and careful nursing care.

((1)) May require treatment for shock.

(2) Importance of saving stools for Medical Officer to see and of sending fresh specimens to laboratory for immediate examination, at request of Medical Officer.

(3) Isolation precautions in doubtful cases.

(4) Diet

(a) At times during first 24 hours may be omitted and fluids administered by Medical Officer under skin (hypodermoclysis) or in vein (intravenous).

2. Peptic Ulcer

a. Ulcer in stomach or beginning of small intestine; rarely in other parts of gastro-intestinal tract.

b. Cause unknown

(1) Small intestinal ulcer (duodenal type) much more common in men than women.

c. Tends to be a chronic condition.

d. Some dangerous complications

(1) Perforation

(2) Hemorrhage

(3) Obstruction

e. Treatment and nursing care

(1) Notify Medical Officer of any change in patient's condition.

(2) Importance of rest

(3) Importance of diet

(a) Patient should get his feedings regularly.

3. Appendicitis

a. Inflammation of appendix due to action of bacteria

(1) Inflammation may subside spontaneously, but often does not.

(a) Danger of rupture causing peritonitis

((1)) Often caused by patient having taken a cathartic or laxative

b. Patient should come under immediate attention and observation of a Medical Officer.

4. Constipation

a. Symptom - not a disease.

(1) Many causes.

b. Importance of charting when patient has bowel movement and of notifying Medical Officer when patient not having daily bowel movements.

5. Diarrhea

a. A symptom and not a disease.

(1) Many causes.

b. Importance of saving stool for Medical Officer's observation.

c. Importance of sending fresh stool specimen

immediately to laboratory at Medical Officer's request.

- d. Importance of treating case as contagious (using isolation technique) until cause proved otherwise.
- e. Some patients may be extremely ill and careful, attentive nursing care important.

6. Functional Diseases of the Gastro-Intestinal tract:

7. Some other Gastro-Intestinal conditions:

a. Jaundice

(1) Many causes

b. Worms

(1) Tapeworm

(2) Hookworms

(3) Others

B. For discussion of Typhoid Fever, Dysentery, etc., see book on Hygiene and Sanitation.

AN OUTLINE IN NURSING FOR MEDICAL TECHNICIANS

SURGICAL NURSING SECTION

LECTURE XXI

Introduction, Surgical Technique and Sterilization

I. Introduction:

A. Surgical nursing is primarily concerned with:

1. The operating room and surgical operations
2. The preparation of surgical dressings
3. Dressing of surgical wounds
4. The pre-operative preparation of surgical patients
5. Post-operative care of surgical patients
6. Minor surgical procedures involved in the special nursing care of certain more or less surgical conditions.

II. Surgical Technique

A. Before an operation it is necessary to make sterile and keep sterile:

1. The patient's skin (as far as this is possible)
2. The hands, as far as this is possible, and clothing of the surgeon and his assistants
3. All instruments and materials that come in contact with the wound or are handled by the surgeon and his assistants.

B. Most perfect surgery may be a complete failure if

there is the smallest break in aseptic technique.

C. Efficiency of nurses and corpsmen make aseptic surgery possible.

D. Definition of Terms:

1. Aseptic Surgery - That mode of surgical practice in which everything used at the time of operation and at subsequent dressings, as well as the wound, is free from pathogenic bacteria and is sterile.
2. Infection - Condition which exists when pathogenic bacteria (infective organisms) gain access to the tissues of the body in such numbers that their presence is manifested by characteristic symptoms, such as inflammation, suppuration, putrefaction, etc.
3. Inflammation - Condition characterized by local pain, heat, redness, swelling and disordered function. May also be accompanied by general symptoms, such as fever, chills, etc.
4. Suppuration - Result of inflammation and due to liquefying action of pyogenic (pus-forming) organisms on the exudates of tissues damaged by inflammation and also upon the tissues themselves, forming pus.
5. Sepsis or Septicemia - Blood Poisoning.

E. Infection is prevented through the employment of measures that destroy infective bacteria and their spores, or inhibit or stop their growth.

1. These measures make up that process in surgical technique known as sterilization.

III. Sterilization:

A. Definition:

1. Process of rendering anything sterile by destroying infective organisms and their spores.

B. Methods of accomplishing sterilization:

1. Mechanical - (does not completely sterilize)

- a. While not dependable, it is an important preliminary step to more complete sterilization.

- b. Types -

- (1) Scrubbing (hot water, soap and brush).

- (a) A thorough scrubbing with hot water, soap and brush is frequently of great importance, as it removes dirt (which may harbor harmful bacteria) from the walls and floors of operating and treatment rooms, from instruments and utensils, the hands of the surgeon and those assisting at operations and dressings, and the skin of the patient.

- (b) Instruments and utensils should always be cleaned and scrubbed immediately after use, as this removes most of the bacteria and makes subsequent sterilization more easily effective.

- (2) Irrigation -

- (a) Irrigation is a splendid mechanical cleanser, and, in many cases, will remove infective organisms when other methods fail.

2, Thermal -

a. Thermal sterilization (heat) is the most efficient agent of sterilization, and when properly used, is almost certain in its germicidal action.

b. Types -

(1) Moist heat

(a) Boiling water

((1)) Simplest method of sterilization, killing anthrax spores in three minutes.

((2)) Used chiefly for sterilizing instruments (except those with lenses), glass and metal utensils, enamelware, and other objects which are not injured by heat and moisture.

((3)) Articles should be boiled for 20 minutes in water containing about 1% (3 teaspoonfulls to the quart) of sodium carbonate, which is added to prevent rusting, to raise the boiling point of the water, and to dissolve any organic matter that may be present.

((4)) In emergencies, surgical dressings may be boiled, but it is far more satisfactory to have them dry at the time of operation.

(2) Live Steam

(a) Is air-free steam and for sterilization purposes is used under normal or increased pressure.

(b) Steam under increased pressure is termed "superheated steam" and is the best method of sterilization.

(c) Autoclave - Description and Uses:

((1)) An autoclave is a sterilizer in which steam under pressure (superheated steam) is used.

((2)) A vacuum is first created to insure penetration of the steam, and when the proper reading of negative pressure (vacuum) is registered in the gauge, superheated steam is admitted to the chamber and the articles therein subjected to a steam pressure of, ordinarily, 20 pounds for one-half to one hour.

((3)) At the end of this time, all organisms will have been killed (barring technical defects in operation of autoclave, such as fluctuations in pressure, which should be checked with indicator), and the dressings or other articles rendered safe to use, but they are wet.

((4)) A second vacuum, then, is induced and maintained until they are dry.

((5)) One such sterilization ordinarily is sufficient to preclude the possibility of infection, but that there may not exist the slightest doubt as to asepsis of the sterilized material, the process is repeated two or three times, despite the fact that anthrax spores are killed by live steam in 12 minutes. This method of repeated sterilization, either by steam or boiling, is termed "fractional sterilization."

(3) Dry Heat

(a) Includes the use of the actual cautery, a flame, or hot air.

((1)) Hot air - fairly satisfactory and it will kill anthrax spores in about 3 hours at 140° C.

((2)) Cautery is a positive germicide, but causes extensive destruction of the tissues.

((3)) Sterilization by a flame is rarely, if ever, used in surgery, but may be used for rapid sterilization of platinum loops, needles, and other small instruments.

3. Chemical

a. General Remarks:

- (1) Chemicals that will kill bacteria and spores are used, but in order to do this promptly they must be used in such a strong solution or concentration that the tissues to which they are applied may likewise be destroyed. As a result, the use of chemicals as sterilizing agents is confined chiefly to the sterilization of instruments which boiling or steam would ruin, or in weak solution as an adjunct to the mechanical method.
- (2) Chemical solutions of appropriate strength are used in the sterilization of instruments, materials and utensils, and the walls and floors of rooms. It is also used to help render as nearly sterile as possible the skin of the patient and the hands of the operator and his assistants.

b. Definitions applied to Chemicals:

- (1) Antiseptic - an agent which inhibits or stops the growth of bacteria, but does not necessarily destroy them.
- (2) Disinfectant - an agent that destroys disease organisms. It is a complete disinfectant if it destroys spores as well as vegetative forms of micro-organisms.

(Note: These 2 terms alone may be confused easily.

Remember, for a chemical to be effective as a complete disinfectant it must be of sufficient strength and must act for a sufficient length of time - See remarks on Phenol).

(3) Deodorizer - an agent which destroys offensive odors.

c. Examples of Chemicals:

(1) Alcohol - strengths 50 to 95%.

(a) Commonly used:

((1)) As cleansing agent; i.e., operator's hands, patient's skin.

((2)) As a solvent or diluent for various antiseptics.

(2) Iodine - strengths varying from 2 to 7%.

(a) Reliable germicide - used as an antiseptic in wounds and the preparation of skin prior to surgery.

((a)) Will not penetrate if the skin or tissues are wet.

(3) Bichloride of Mercury -

(a) In weak solutions, has powerful germicidal action on superficial bacteria, but is of little value as a germicide in deep wounds.

(b) A 1 in 500 solution in alcohol is useful in sterilizing rubber goods.

(c) Has a corrosive action on metals and should never be used to sterilize instruments.

(4) Phenol - (Carbolic Acid)

- (a) In saturated solution, is used for sterilization of cutting instruments which would be injured by boiling. They are submerged in the solution for 15 minutes, washed in sterile water and placed in alcohol until needed.
- (b) At times, used as a local cauterizing agent.
- (c) Phenol dressings should not be used because of the danger of subsequent gangrene.

(5) Dakin's Solution - Solution of Sodium Hypochlorite - Strength between 0.45 and 0.5% and practically neutral in reaction.

- (a) In contact with tissue gives off nascent chlorine.
- (b) Rapidly decomposed by light and heat and should be titrated daily.

(6) Potassium Permanganate -

- (a) An excellent deodorizer.

(7) Boric Acid

- (a) Mild Antiseptic
- (b) Generally used in saturated solution (4%) for the irrigation of infected wounds.

(8) Formaldehyde -

- (a) Excellent germicide
- (b) Used either as a gas or in solution
- (c) Very irritating to tissues.

(d) In weak solutions (1 to 2%), it will

prove a satisfactory sterilizing solution for instruments.

(9) Various other antiseptics, including dyes -

(a) Merchurochrome

(b) Gentian Violet

(c) Acriflavine

C. Examples of time and pressure in superheated steam or autoclave sterilization:

1. Large packs - 60 min. - 20 lbs. pressure with 20 to 30 min. - vacuum for drying.

2. Small packs - 30 min. - 20 lbs. pressure with 15 to 20 min. - vacuum for drying.

3. Enamel ware, glassware, rubber goods (with rubber gloves only, it is best to put a small pan of water in the autoclave in order to prevent loss of elasticity of the rubber), - 15 min. - under 15 lbs. pressure with no vacuum.

4. Solutions in flasks - 15 min. at 15 lbs. pressure. Pressure allowed to decrease gradually. No vacuum is used on solutions.

D. Examples of time and strength of solutions in chemical sterilization.

1. Sharp instruments - $37\frac{1}{2}\%$ solution of Phenol - 15 min. rinsed in sterile water and placed in 95% alcohol for 20 minutes.

2. At this hospital (L.G.H.) a concentrated cresol solution is used for sterilization of all sharp instruments. These instruments are kept at all times in this solution, insuring that they are always ready for use. They are washed thoroughly with hot sterile water just before using. In any event, instruments should remain at least 30 minutes in the pure cresol solution.

AN OUTLINE IN NURSING FOR MEDICAL TECHNICIANS

SURGICAL NURSING SECTION

LECTURE XXII

Surgical Dressings, Sutures, Ligatures, etc.

I. Surgical Dressing

- A. Surgical dressings commonly are made from gauze, cotton, flannel, rubber, linen, etc., by the operating force.
- B. The gauze and cotton should be of good quality and capable of rapidly absorbing fluids.
- C. Sponges are used for many purposes and are made of gauze, either rolled in a ball or flat. The flat sponges are of various sizes from 4x4 to 4x8 inches and are usually of from 6 to 8 thicknesses of gauze. All raw edges are turned in. Sponges are wrapped in muslin wrappers for sterilization.
- D. Packs, or tapped sponges, are used for surrounding the field within the abdomen. For sterilization they are placed in muslin covers or bags, each package containing a definite number and so labeled. During the operation, the nurse or hospital corpsman in charge of them must know the exact location at all times of every pack that has been issued.

- E. Pads consist of various thicknesses and sizes of absorbent cotton wrapped in an outer covering of gauze. They are used in wound dressings for absorbing fluids and to protect the tissues from pressure.
- F. Sheets and towels are folded in a certain manner and wrapped, a definite number in each package, in a small muslin cover for sterilization.
- G. Caps and masks - worn to prevent infection by dandruff or secretions from the mouth and nose. They are sterilized.
- H. Pajamas - worn in place of their outer clothing by surgeons and hospital corpsmen during operations. They may or may not be sterilized.
- I. Operating gowns - worn by all persons present at an operation. They are sterilized.
1. Putting on gown.
 - a. One should avoid touching the ungloved hand to its outside.
- J. In preparation for emergencies a hospital should have on hand a considerable quantity of sterile goods. They may be placed in metal drums or in packages, each containing a standard outfit for an operation. These should be sterilized once a week if not used.
1. Outfit is packed as follows: A double muslin cover is laid out smooth, a sheet folded in the middle is placed on it, and the articles listed, stacked neatly, are placed on the sheet. The ends of the sheet

are brought together, then the outer cover is pinned together, and the whole package is sterilized.

II. Sutures and Ligatures:

- A. Principal kinds of sutures and ligatures -
 - 1. Absorbable (plain gut, chromic gut, kangaroo tendon).
 - 2. Non-absorbable.
- B. Gut sutures used in the deep tissues such as peritoneum, muscle and fascia.
- C. Plain gut is supposed to last 8 to 10 days in the tissue.
- D. Chromic gut sutures are prepared in 4 types, to last 10, 20, 30 and 40 days in the tissue, but the rate of absorption is quite variable.
- E. Gut sutures come in various sizes from 0000 to 4. They are usually issued in plain glass tubes which may be sterilized by boiling or submerging in a special suture sterilizing solution, such as potassium - mercuric - iodide 1-8000 in 95% alcohol.
- F. Unabsorbable sutures are made of silk, linen, silkworm gut, horsehair, silver wire and other materials.

III. Instruments

- A. Most surgical instruments are made of special steel, and are nickel plated to prevent rusting. Newer are made of stainless steel which is not plated.
- B. After an operation all metal instruments should be washed carefully to remove all blood and other foreign matter - then dried and wiped with liquid petrolatum.

IV. Operating Personnel

- A. Operating surgeon
- B. Operating room nurse
- C. Anesthetist
 - 1. Blood pressure, pulse and respirations
- D. Corpsmen
 - 1. Dependability
 - 2. Faithfulness in most minute details of his work
 - 3. Even temper
 - 4. Intelligent

V. Preparation for Operation

- A. Operating room personnel removes outer clothes.
- B. Scrubs up.
 - 1. Hands and forearms - 15 minutes - hot water and green soap - and rinsed and soaked in 70% alcohol.
- C. Dries only hands.
- D. Sterile gowns and sterile rubber gloves.
- E. Hold hands above waist.
 - 1. Sterile towel.
- F. Field of operation shaved before the patient enters the operating room.
- G. Skin preparation - after patient is unconscious if general anesthetic. (Preliminary skin preparation done day preceding operation if operation not an emergency)
- H. Preparation of skin.
 - 1. Prepare day before surgery.

2. Shaving skin.
3. Cleansing skin.
 - (a) Green soap solutions
 - (b) Ether
 - (c) Gasoline (without lead)
4. Removal of iodine with alcohol.
5. Type of preparation for abdominal cases.
6. Type of preparation for orthopedic cases.
7. Type of preparation for rectal cases.

AN OUTLINE IN NURSING FOR MEDICAL TECHNICIANS

SURGICAL NURSING SECTION

LECTURES XXIII and XXIV

Pre-operative and Post-operative Care

I. Pre-operative Preparation:

A. General:

1. The details of the preparation of a patient for an operation vary somewhat in different hospitals, but the general principles are the same.
2. Overtiring or exciting a patient previously will cause unfavorable reaction. (no teasing)
3. Usually patients for operation are sent to the hospital 24 hours before, so that necessary preparations may be made without haste and without exhausting the patient.
4. Much of the pre-operative preparation of the patient for the operation takes place before the operation is scheduled.

B. Bath:

1. The patient should, if he is able, take his own bath and shampoo, but he should be inspected afterwards to make certain he is thoroughly clean. Patients having an elevation of temperature should be given a cleansing bath in bed.

C. Local Preparation:

1. Most surgeons have their own special routine.
2. Special attention should be given to the umbilicus.

D. Stomach, Intestine and Bladder:

1. The stomach, intestine, and bladder should be empty to prevent embarrassment and the contamination of the patient and operators by the involuntary discharge of the contents of those organs when the patient becomes relaxed under the anesthetic; to prevent accidental incision of the bladder or intestine because of their distention; to prevent choking from aspirating fluid or food during vomiting; also to prevent unnecessary discomfort following an operation, from accumulation of gas due to putrefaction of partially digested food in the intestine.
2. Usually a cathartic is ordered night before the operation.
 - a. Castor oil
3. Enema the morning of the operation.
 - a. Do not stimulate excessive peristalsis.
4. Frequently the surgeon will order enema at 8:00 P.M. the night preceding the operation.
5. Except in special emergency, enema should not be given immediately before going to operating room.

E. Urinalysis and Blood Count:

1. On the morning before and the morning following an operation under a general anesthetic a specimen of urine is sent to the laboratory for examination.

F. Diet:

1. The diet the day preceding operation should consist of light nutritious food. No solid food within 12 hours of the operation, as a rule.
2. If the patient is weak and requires nourishment, strained soups and broths may be given up to 6 hours before the operation, after which nothing should be given by mouth.
3. Water should be given freely up to within six hours of an operation.
4. When operation is to be performed under local anesthesia, a light breakfast is often given on the day of the operation.

G. Teeth:

1. Teeth should be clean. If an elective operation is to be performed, an attempt should be made to get the mouth in as clean a condition as possible. This might require extensive dental work.
2. Artificial teeth should be removed and placed in boric acid solution in a labeled receptacle.

H. Sedatives, Analgesic:

1. Patient usually given a sedative the night before an operation, and frequently the next morning. Type of sedative and amount depends on the type of operation and the doctor's judgment.

2. An opiate by hypodermic injection usually given 10 minutes to 1/2 hour before the patient leaves for operation room, depending on surgeon's order.
3. Time given, and amount, are recorded on patient's chart and anesthesia record.

I. Other things to consider in pre-operative care:

1. Reverse pajama coat, before surgery.
2. When patient leaves for operating room on the wheeled stretcher, he is wrapped with blankets, the head being usually covered with a special operating room cap or with a towel to protect his head from drafts and to absorb excess of moisture during anesthesia.
3. Record the time of departure for operating room.
4. Patient should empty bladder before going to operating room; record.
5. In placing patient on operating table care should be taken to see that his position on it is as comfortable and unstrained as possible.
 - a. Small pillow or pad under hollow of back will aid greatly in preventing undue strain which results in the severe backache so frequently complained of by post-operative patients, sometimes far exceeding the pain and discomfort of the operation itself.

II. Post-operative Care:

A. General

1. Begins with his return from operating room.
2. Place in well-warmed ether bed in warm room with sufficient ventilation but without drafts: Do not leave alone until fully regains consciousness.

B. Other routine things to consider:

1. Take pulse, respiration every 10 to 15 minutes during first 2 hours, and longer if necessary.
If no reason for alarm, take every half hour for the next hour or so, and then every 2 to 3 or 4 hours.
Record as taken.
2. Until the patient has reacted, hold his jaw upward and forward firmly, but without rigid pressure, as too great pressure might cause facial paralysis; this to prevent the tongue from falling back in the throat.
3. Turn head somewhat to one side.
4. Procedure if vomiting occurs:
 - a. Raise the head slightly and tip it forward to the side, placing the kidney basin under the angle of the jaw, and supporting the patient's head with one arm and hand. With the other hand wipe his mouth, using squares of gauze.
5. Procedure if violent retching occurs: (in abdominal case)
 - a. Apply firm pressure over the region of the wound to prevent undue strain on the sutures and the surgically injured muscles.

6. Dry patient and change clothing when possible.

7. Allow nothing by mouth until ordered by surgeon

and allow no water within reach of patient until he is permitted to have it freely.

8. If mouth is very dry, swab it occasionally with iced water.

9. Persistent vomiting may require gastric lavage

which should be done by the doctor or under his supervision.

10. Proctoclysis:

a. Many surgeons, as a routine procedure, order 500 cc of fluid by proctoclysis, to be administered as soon after the patient's return from the operating room as is practicable for all abdominal cases that have had a general anesthetic. The kidneys are thus furnished with fluid to assist in flushing and in elimination of waste, and the bladder is stimulated to action, and discomfort from thirst is lessened.

11. Urinary retention:

a. Retention of urine after an operation is very common. When a patient does not void within 8 to 10 hours following an operation, especially if he complains of any discomfort, the surgeon should be notified after all simple means to induce patient to void have been tried. Catheterization may then be ordered, and is performed by or under the supervision of the surgeon.

C. Special complications to watch for, guard against
and report promptly.

1. Hemorrhage.

- a. Manifested by a weak, rapid pulse, pallor, sub-normal temperature, excessive restlessness, drawn anxious expression, thirst and air hunger, blood-stained dressings or blood in stools, urine or vomitus.

2. Collapse.

- a. Manifested by excessive weakness, cold, clammy skin; weak, thready, almost imperceptible pulse, unconsciousness.

3. Temporary paralysis of peristalsis.

- a. Excessive distention; failure to expel flatus by rectum.
- b. Respiratory and heart symptoms due to pressure of gas on diaphragm.
- c. Symptoms of shock.

4. Peritonitis.

- a. Symptoms include many of foregoing, and in severe cases the restlessness, rapid respirations, and feeling and appearance of apprehension are extreme.

5. Care of hemorrhage:

- a. Inform medical officer immediately.
- b. Don't leave patient alone.
- c. Stand by and reassure patient.
- d. Reinforce outer dressings, tighten bandages where practicable while waiting for the surgeon.

e. Tonsillectomies:

(1) Elevate head and shoulders.

(2) Apply ice collar to throat.

6. Care of collapse:

a. Immediate reporting to medical officer.

b. Prompt application of heat.

c. Stimulation.

7. Care of paralysis of peristalsis:

a. Report symptoms to medical officer.

b. Relief measures, as insertion of rectal tube, turpentine enemata, hot stupes, external heat, etc.

8. Care of peritonitis:

a. Prompt reporting and carrying out procedures.

b. Fowler's position:

(1) 40 to 50 degrees elevation.

9. Have patient keep fingers away from wound in order to prevent contamination of wound.

D. Care of the genito-urinary tract:

1. Catheterization - Word generally used in connection with the withdrawal of fluid from a body cavity, particularly with reference to the removal of urine from the bladder or ureters. Purposes of the latter type of catheterization are: to relieve the discomfort of a patient when, because of retention, he is unable to void; to obtain a sterile specimen of urine; to empty the bladder when urination is involuntary.

2. Catheterization Tray (L.G.H.) - All wards in which bed patients are hospitalized will maintain constantly ready for use an article of equipment to be known as a "catheterization tray". This equipment will consist of the following:

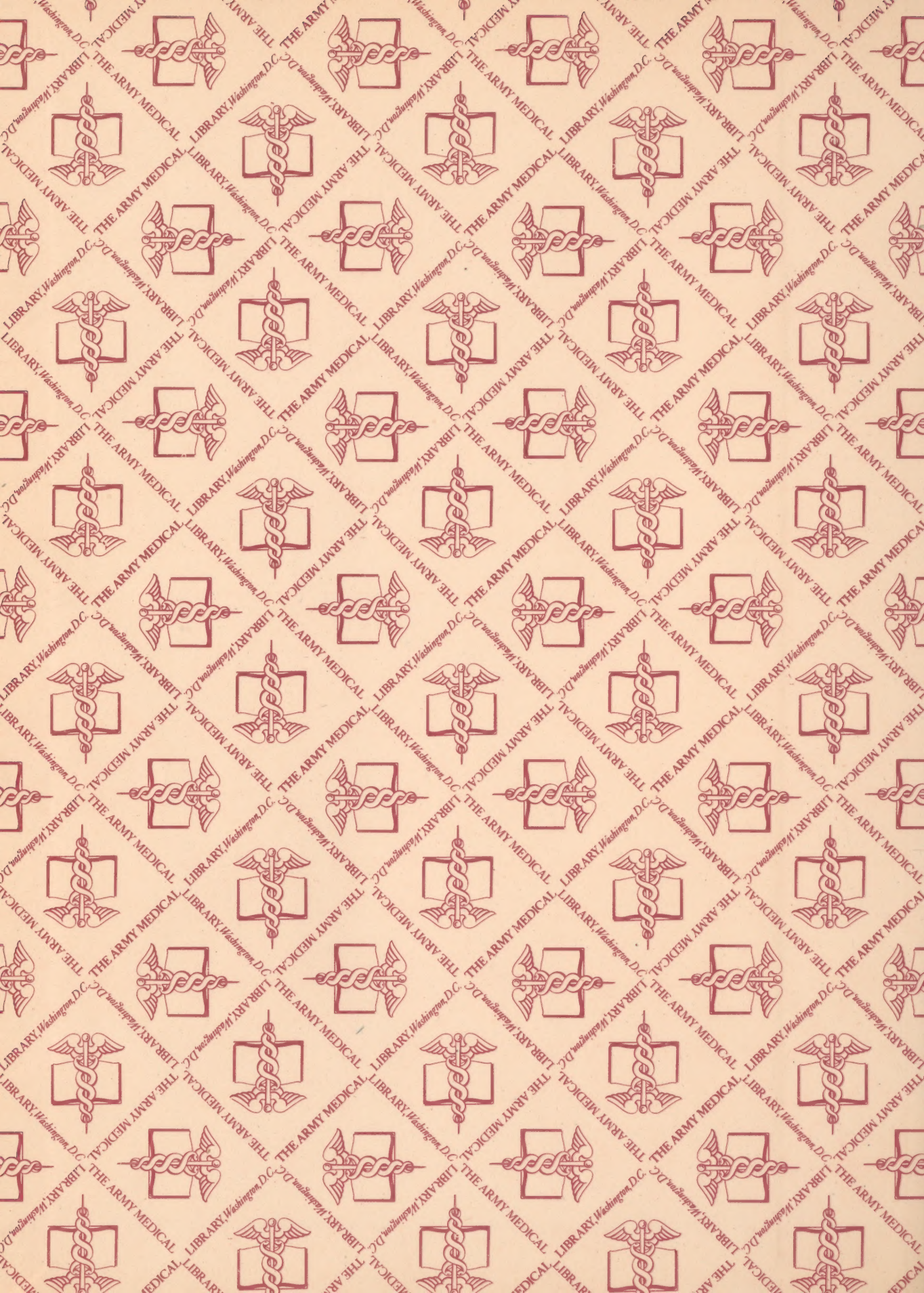
Article:	Procured from:
1 Card of instruction for catheterization	Med. Supply Officer
1 Tray	" " "
1 Rubber Catheter No. 22 French	" " "
1 Rubber Catheter No. 18 French	" " "
1 Syringe, rubber, Young's	" " "
2 Glasses, medicine	" " "
1 Forceps, hemostatic, curved	" " "
2 Bowls, solution, E.W.	" " "
1 Bottle solution, green soap, 250 c.c. approx.	Pharmacy
1 Bottle 1 to 500 solution Bichloride of Mercury 250 c.c. approx.	"
1 Package Sterile Gauze, 4x4	Gauze Preparation Rm.
1 Package Sterile Towels	Gauze Preparation Rm. in exchange for 2 non-sterile towels
1 Jar Lubricating Jelly, 120 c.c. (sterilized in ward)	Pharmacy
1 Bottle (w.m.) Argyrol Solution 10%, 60 c.c. approx.	"
1 Package Rubber Gloves	Gauze Preparation Rm. in exchange for non-sterile gloves

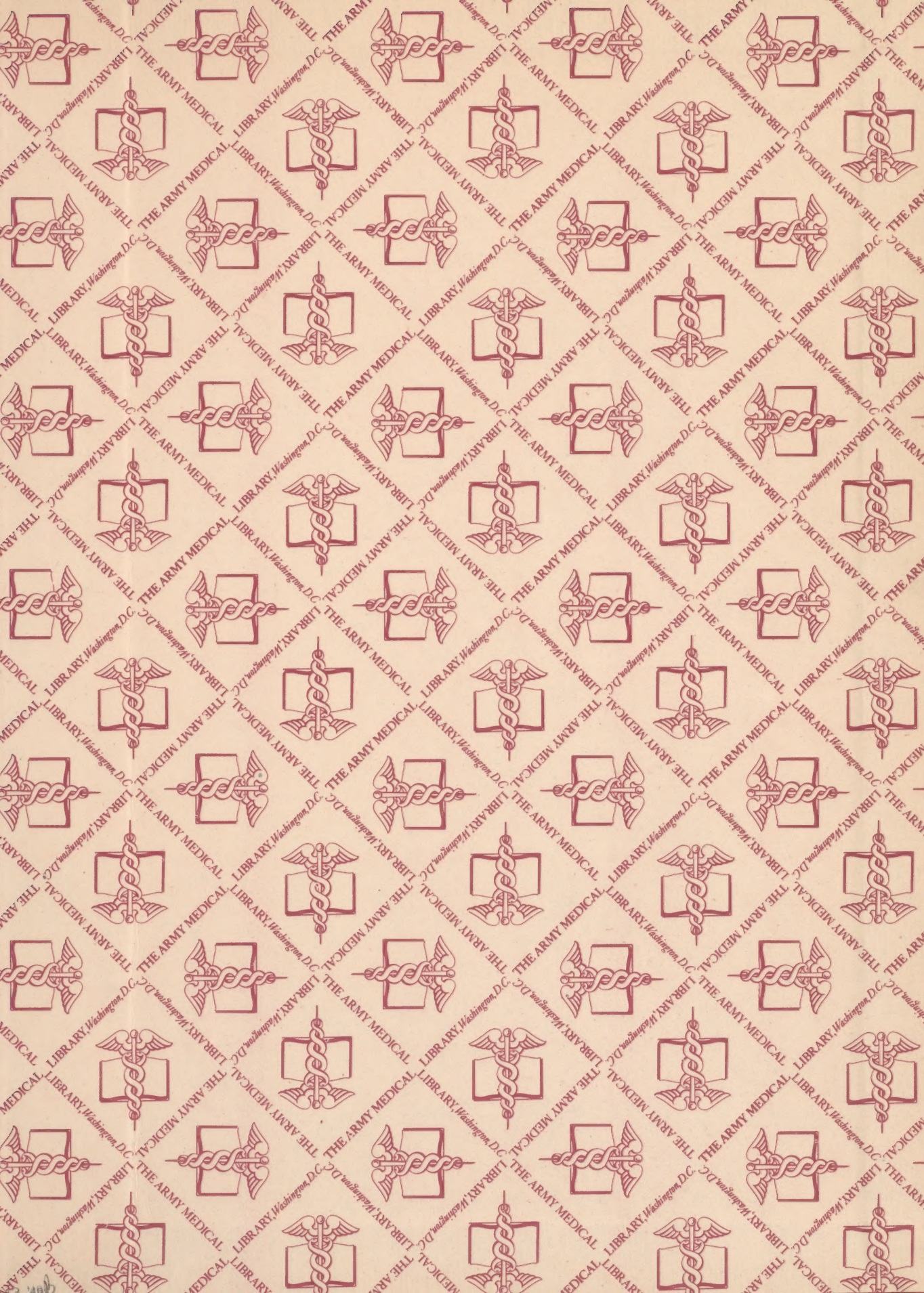
3. Remember, always, to use strict aseptic measures in preparing for and carrying out this procedure; never to catheterize until all routine means of inducing patient to void have been exhausted and then only when ordered by a medical officer; to have hands surgically clean and not to touch the catheter on or near the end. (wear sterile gloves), to be inserted, nor let it come in contact with anything unsterile; to have good light.
4. "Procedurẽ of catheterization."
 - a. Cleanse around glans and foreskin, and external urinary meatus, using green soap solution and 1:5000 solution of mercury bichloride.
 - b. Drape sterile towels, one under penis and one on abdomen.
 - c. Attendant should disinfect hands, and put on sterile gloves.
 - d. Lubricate catheter, and introduce it without force until it enters the bladder and the urine starts to flow.
 - e. When the bladder is empty irrigate with warm boric acid solution, if this is the desire of the medical officer. Some medical officers may prefer to instill a small amount of 10% Argyrol, i.e., 5 cc.
 - f. Remove the catheter carefully, and apply a sterile compress to the urethral exit if necessary.

5. When catheterizing observe the following precautions:
- a. Never use force.
 - b. Have all articles used sterile, and hands clean, and wear sterile gloves, as improper care and the introduction of bacteria into the bladder or injuring the mucous lining of the bladder or urethra may give rise to an inflammatory condition which is very hard to cure.
 - c. If the bladder is distended greatly, not more than 600 cc of urine should be removed at once, as the bladder walls would collapse; enough urine should remain in the bladder to keep its walls separated until they have gradually contracted to normal size.
6. Measure the urine obtained and record the amount on clinical notes, together with the time of catheterization.
7. Expedients that should be tried to cause voluntary micturation before catheterization is resorted to are:
- a. Placing the patient on a bedpan and pouring warm water over the pubis. (if no danger of contaminating operative wound)
 - b. Applying hot compresses or a hot-water bag to the pubis (don't contaminate operative wound)
 - c. If the patient is near a faucet, allow water to run from the faucet in order that he may hear the sound of running water.

- d. Give plenty of fluids to drink, if allowed,
especially mineral water and lemonade. *ditto*
- e. With the medical officer's permission only,
allow the patient to sit up with support.







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